A75-399 - RICHARD K. G. STURSBERG - EXHIBITS

ENCLOSURE #7
A75-399 P STURSBERG

A Summary Report MAHINAHINA P.U.D. Site Study

DOCKET NO. A75-399

PARTY P-Richard Stursberg EXH. NO. 1

DATE IDENTIFIED 1/15/76 IN EVIDENCE 1/15/76

D. Hoshaw
CLERK

J.two
planning and design consultants

A Summary Report
MAHINAHINA P.U.D.
Site Study

J.two

6521 24 th N.E., Seattle, Washington, 206-525-1980

April 20, 1975

Mr. R. K. G. Stursberg, Chairman
Mahinahina Group Partnership
1620 Taylor Way
West Vancouver, B. C.
Canada V7S-1N4

Dear Mr. Stursberg:

We are pleased to transmit to you "A Summary Report: MAHINAHINA P.U.D. Site Study". It has been a great pleasure for us to participate on the initial stages of your proposed project.

It is our feeling that the proposed site plan enclosed within this report is a sound and workable design alternative and, if implemented, would provide mutual benefits for you as the potential developer of the site, Maui County and future residents of the development. We believe this plan sensitively responds to all available data concerning the natural and visual character of the site, legal restrictions and land use policies regarding the site, local development trends, housing market and demand, and the location of public service and utilities which are either planned or extant.

Should there be any questions, or if we can be of further assistance, we would appreciate your call.

Sincerely yours,

Lani v.d.L. and Larry E. Johnson
Partners

J.two
planning and design consultants
6521-b 24th N.E. Seattle, Washington 98115 206-525-1980

Section I: Natural Systems Inventory

LOCATION

PHYSIOGRAPHY

SOILS

GEOLOGIC BASE

RAINFALL

HYDROLOGY

VEGETATION

POTENTIAL VIEWS

SITE PLANNING RECOMMENDATIONS

LOCATION

The Mahinahina Mauka site is located on the island of Maui in the state of Hawaii.

Maui, located between 21° 02' and 20° 35' North latitude and 155° 59' and 156° 52' West longitude, is the second largest island of the Hawaiian Archipelago. Maui is composed of two volcanoes joined together by a low isthmus. The largest volcano, Haleakala or East Maui, is dormant and reaches a summit elevation of 10,023 feet above sea level. The geologically older, extinct West Maui Mountain, deeply eroded and cut by steep canyons, reaches a summit peak at Puu Kukui of 5,788 feet above sea level. Maui is 48 miles long, 26 miles wide, has a shoreline length of 147 miles and a total land area of 728 square miles.

The two largest urban centers on Maui are located on the Isthmus. Kahului, with a 1970 population of 8,280[1], is the largest center on the island and is the location of Maui's major harbor and airport. Wailuku, with a 1970 population of 7,979[2], is the county seat.

The leeward coast of West Maui, between Lahaina and Napili, is currently the largest resort area on the island and is part of the Lahaina District. Midway between Lahaina and Napili is the Kaanapali resort which includes a small plane airport, two golf courses, a very extensive sand beach, several major hotels, shops, restaurants and a small shopping center. Lahaina, the largest town on West Maui and third largest center on the island with a 1970 population of 3,718[3], has a small boat harbor, several small shopping centers, museums, restaurants, offices and small shops. West Maui's schools, post office, medical center, sugar mill and major churches are centered in Lahaina; West Maui's fire station, police headquarters and gymnasium are located in a new Lahaina Civic Center complex between Lahaina and Kaanapali. Napili, approximately 9 miles north of Lahaina, includes small hotels, restaurants and two sandy swimming beaches. A major resort development is planned for the Kapalua area, adjacent to Napili.

Mahinahina is a small area in the Lahaina District approximately one mile north of Kaanapali. The Mahinahina coastline is generally rocky and, *makai* of Honoapiilani Highway, has been developed as a residential and vacation-apartment area.

The Mahinahina Mauka site is located *mauka* of Honoapiilani Highway and *makai* of the proposed new highway. The site is a 27.8 acre parcel which has no ocean frontage but which does have ocean and mountain views, although the ocean views are semi-obstructed by extant apartment developments. On the south side of the property is a planned drainage channel. A future 10 acre county park is shown in the Lahaina District General Plan as being planned for the property immediately

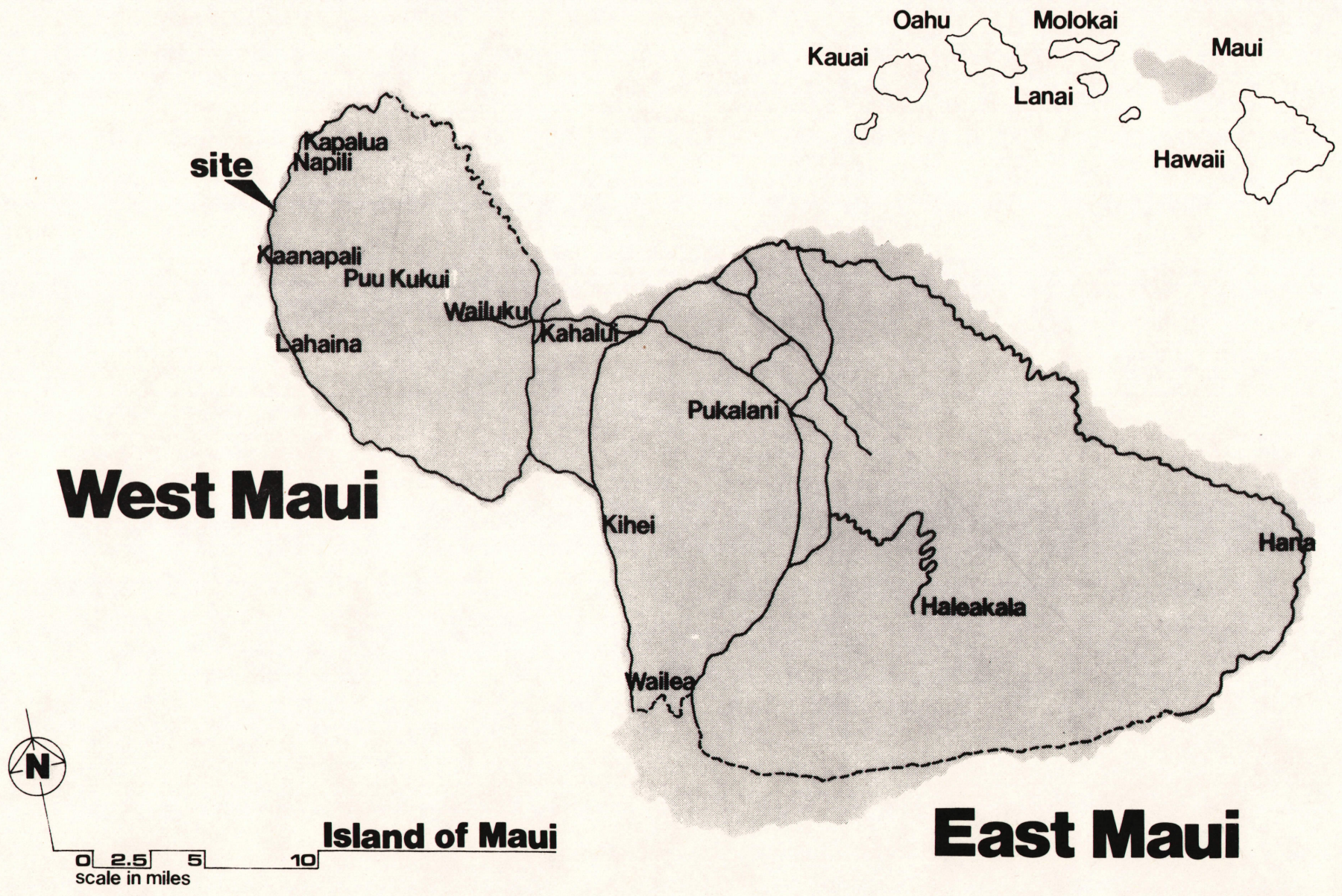

Oahu
Molokai
Kauai
Maui
Lanai
Hawaii
site
Kapalua
Napili
Kaanapali
Puu Kukui
Wailuku
Kahalui
Lahaina
Pukalani
West Maui
Kihei
Hana
Haleakala
Wailea
East Maui
N
Island of Maui
0 2.5 5 10
scale in miles

figure : 1

to the north of the site. A moderately small, attractive, sandy public beach is located *makai* of the proposed park site.

PHYSIOGRAPHY

The Mahinahina Mauka site, which may be broadly described as a sloping plain bounded on two sides by small gullies, has a roughly oblong overall configuration with the longer sides facing east, toward the mountains, and west, toward the ocean. The site is characterized by a moderate, fairly consistent slope from the east side of the property dipping toward the west. Both the short north and south ends of the site dip downward away from the site into small gullies.

TOPOGRAPHY

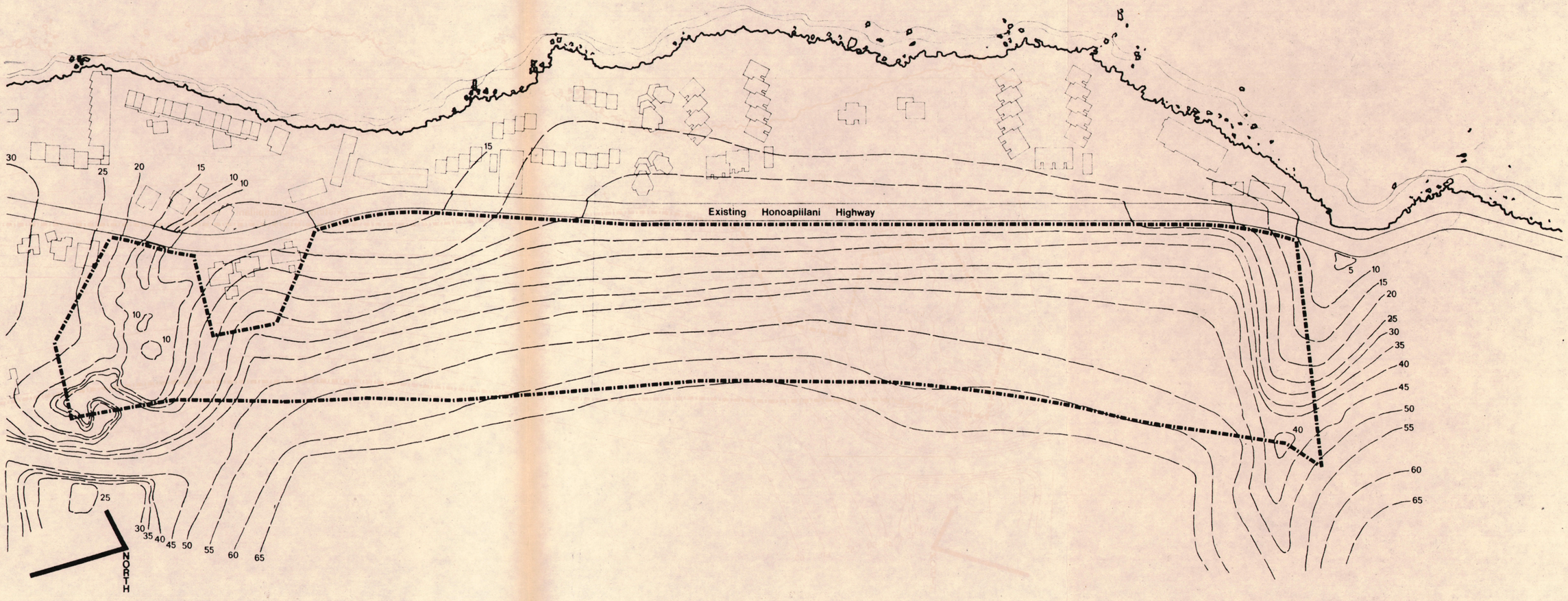
The approximate topography of the site is shown in Figure 2. Extreme elevations on the site range from a high point roughly in the center of the *mauka* property boundary with an elevation above sea level of approximately 65 feet, to a low point near the southwest corner with an elevation above sea level of less than 10 feet but greater than 5 feet. The extreme northwest corner of the site also dips down to elevations of approximately 10 feet above sea level. Both low areas on the site, the southwestern area being considerably more extensive than the northwestern one, are related to existing natural drainage channels.

SLOPE

A slope analysis map (Figure 3) was derived from the topographic data to give a breakdown of the sloped character of the site in greater detail. The bulk of the Mahinahina Mauka site falls within the 0% to 5% and the 5% to 10% slope categories. The distribution of the five slope categories over the entire site is shown in the following table.

TABLE 1. SLOPE DISTRIBUTION OF MAHINAHINA MAUKA SITE

Slope Category	Total Acreage	Percent of Site
0 - 5%	6.4	23.0
5 - 10%	10.3	37.0
10 - 15%	5.3	19.0
15 - 20%	4.5	16.2
20% or more	1.3	4.8
TOTAL	27.8	100.0%



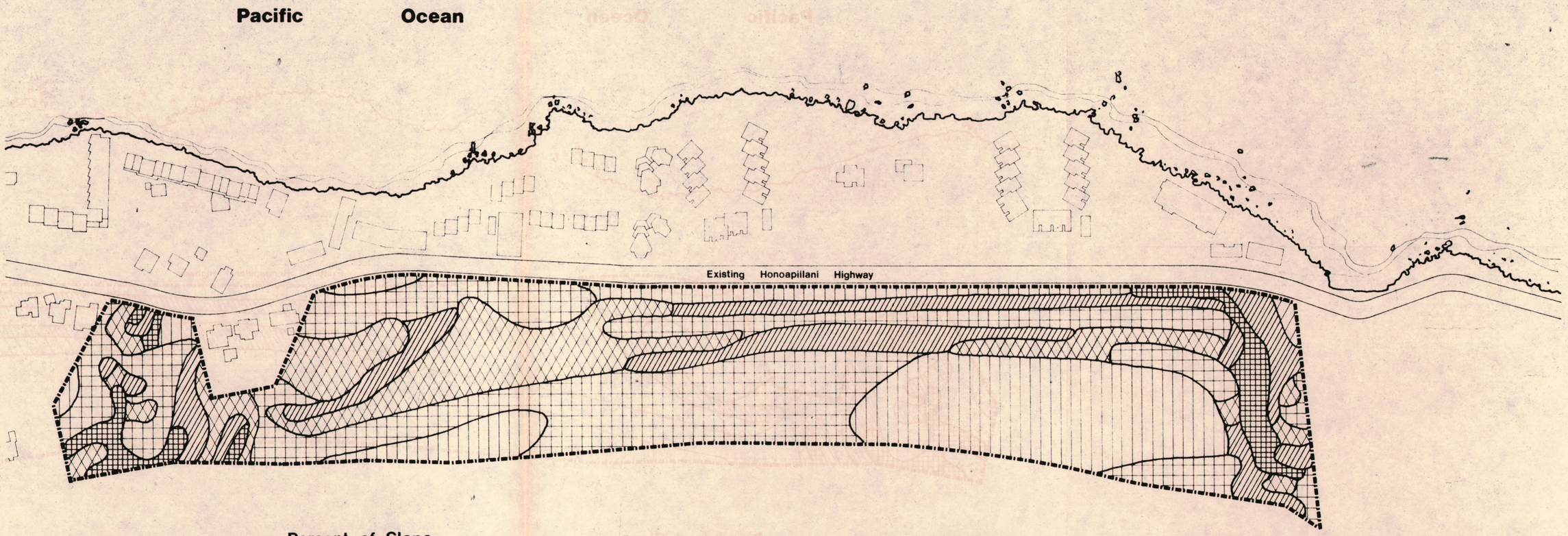
Elevations of contours given in feet above mean high tide line.

J.two
planning and design consultants

100 400 800 proposed

Mahinahina P.U.D.

Topography



J.two
planning and design consultants

100' 400' 800'

proposed

Mahinahina P.U.D.

Slope Analysis

As can be seen from the slope analysis map and table, most of the site is very suitable for building in terms of slope, and the site does offer workable grade changes. The steeply sloped areas, areas with slopes of 20% or greater, on both the extreme north and the extreme south portions of the site, however, are limited in their building suitability due to their slope and their rocky character. The very flat areas of the site can be regraded fairly easily to create better drainage.

SURFACE FEATURES

Most of the site is in sugar cane cultivation and does not have any particularly unusual or distinctive surface features. The extreme north and south sides of the site are characterized by rougher terrain, scrub growth and some very rocky areas.

SOILS

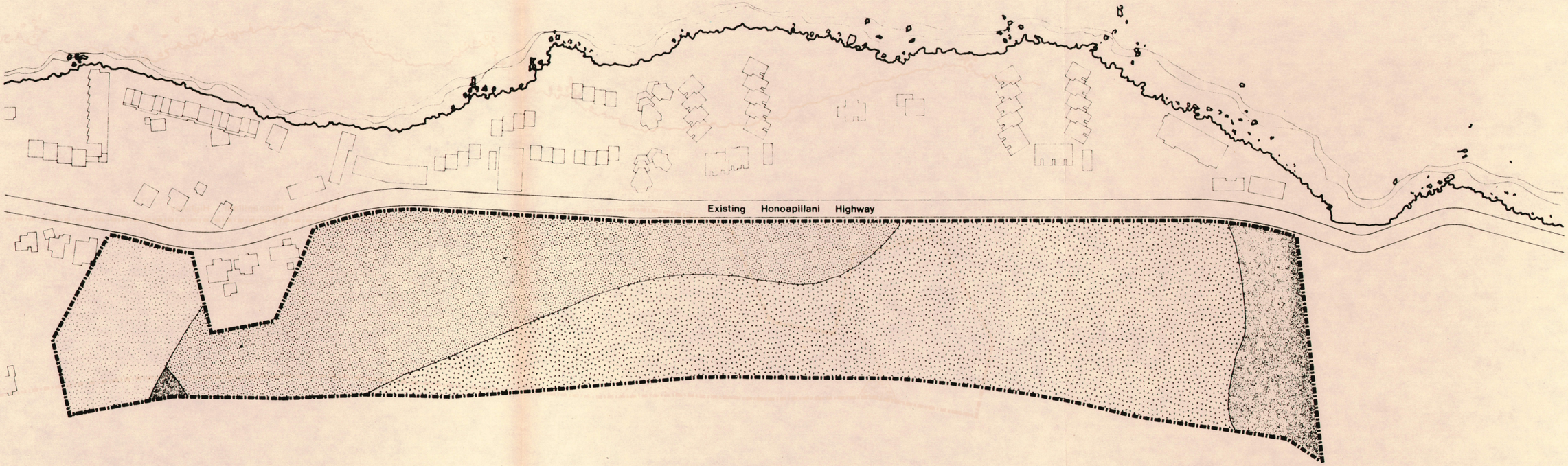
Three distinct soil types are found within the Mahinahina project site. The major portion of the site consists of Lahaina series silty clay present in two phases: LaB, which is associated with average slopes of 3% to 7%, and LaC, which is associated with average slopes of 7% and 15%. Ewa series silty clay loam comprises most of the extreme southernmost portion of the site. Rough Broken and Stony Land is found in a small area adjacent to the Ewa silty clay loam and in a larger area along the northernmost boundary of the site. A brief discussion of the characteristics and suitabilities of each of the above soil classifications follows.[4]

LAHAINA SERIES

Lahaina soils are well drained, moderately fine textured soils composed of materials weathered from basic igneous rocks.

The LaB phase of Lahaina silty clay is characterized by a reddish brown, moderately fine textured surface layer which has an approximate depth of 15 inches. The subsoil layer of blocky silty clay and silty clay loam has a darker reddish brown color and an approximate depth of 45 inches. Weathered, soft basic igneous rocks comprise the substratum. The soil has medium acidity (5.6 to 6.5 ph) in the surface layer and slightly lower acidity in the subsoil layer. Permeability of this phase is moderate (0.63 to 2.0 inches per hour) and surface run-off is slow. There is little probability of erosion hazards. The seasonal high water table is at a depth greater than 5 feet from the surface. Root penetration can be found at depths of 60 inches or greater.

The agricultural suitability of LaB soils is fairly good. The capability classification designated by the U.S. Department of Agriculture is IIe for irrigated LaB soils (moderate conservation practices are required as there is a possibility of erosion damage to cultivated and unprotected soils) and IIc for non-irrigated LaB soils (droughty climatic conditions pose limitations upon cultivation). This soil phase is further rated as a Group 1 soil for



EaA Eva silty clay loam
LaB Lahaina silty clay
LaC Lahaina silty clay
rRS Rough broken and stony land

J.two
planning and design consultants

100 400 800
proposed

Mahinahina P.U.D.

Soils

sugar cane and woodland growth (highest suitability), Group 2 for pineapple (moderately high suitability), and Group 3 for pastureland (moderately high suitability).

LaB soils are suitable for residential development; no major building problems associated with soil conditions are anticipated. Lahaina silty clays are very well suited for low building foundations, embankments and roadbeds. Additionally, they are good sources of both topsoil and roadfill. As surface run-off is slow, care should be taken in the development of drainage patterns.

The LaC soil phase is very similar to LaB in its descriptive characteristics. In accordance with the more steeply sloped nature of the LaC phase, surface run-off is faster than it is on LaB soils, and the probability of erosion hazards is greater. Both surface run-off and likelihood of erosion damage are moderate. The surface layer may be slightly less deep than that of LaB.

The agricultural suitability of LaC soils is slightly less than it is for LaB soils. The U.S.D.A. capability classification of this phase is IIIe, for both irrigated and non-irrigated conditions, indicating that special conservation measures are necessary as LaC soils are subject to fairly severe erosion damage if cultivated and unprotected. This soil phase is further rated as a Group 1 soil for sugar cane and woodland growth (highest suitability), and a Group 3 soil for pineapple and pastureland (moderately high suitability).

LaC soils are suitable for residential development; no major building problems associated with soil conditions are anticipated, although the steeper slopes of this phase may impose some limitations on development. The soil is suitable for roadbeds and building foundations; however, sizable land cuts and fills may be required. Careful site planning should be able to keep required earthwork to a reasonable minimum. Care will additionally have to be taken in the development of drainage patterns.

EWA SERIES

Ewa soils are well drained alluvial soils associated with areas with level or low slopes.

The phase of Ewa silty clay loam found on the Mahinahina Mauka site is EaA, with average slopes of 0% to 3%. This phase is characterized by a dark reddish-brown surface layer (A horizon) which has an approximate depth of 18 inches or more. The subsoil layer (B horizon) is composed of subangular, block dark reddish-brown silty clay loam. Gravelly alluvium, sand or coral limestone comprise the substratum. Ewa soils are neutral (6.6 - 7.3 pH) in both the surface and sub-soil layers. Permeability of this phase is moderate (0.63 - 2.0 inches per hour) and surface run-off is very slow, especially due to the nearly level slope of EaA soils. Probability of erosion hazards is very slight. The seasonal high water table is usually at a depth exceeding 5 feet from the surface. Root penetration can be found at depths of 60 inches or greater.

The agricultural suitability of EaA soils is fairly good. The capability classification designated by the U.S. Department of Agriculture is I for irrigated EaA soils (high suitability; no limitations on agricultural development are anticipated) and IVc for non-irrigated EaA soils (droughty climatic

conditions coupled with good to excessive drainage in this soil impose severe limitations on agricultural development). This soil phase is further subclassified as a Group 1 soil for sugar cane and pineapple production (highest suitability) and a Group 2 soil for pastureland (fairly high suitability).

EaA soils are suitable for residential development; no major building problems associated soil conditions are anticipated. Ewa soils are very well suited for low building foundations, roadbeds, and embankments. Additionally, they are good sources of topsoil and roadfill

ROUGH BROKEN AND STONY LAND

Rough broken and stony land (rRS) is associated with very steep and stony gulches located between the elevations of 25 feet and 3,000 feet above sea level. This soil phase is distinguished as thin soil cover with a 3% to 25% surface covering of stones. A few rock outcrops may be present. The soil cover, seldom exceeding 20 inches in depth, is underlain by saprolite or bedrock. Mechanical weathering processes are active in rRS soils. Surface run-off is very rapid, and the probability of erosion hazards is high. Erosion damage is often evident on rRS soils upon inspection. Other soil characteristics are variable.

Agricultural suitability of rRS soils is very low. The U.S. Department of Agriculture capability classification for non-irrigated rRS soils is VIIIs (very severe limitations upon agricultural development are imposed by shallow soil, poor soil texture, stony character, droughty climatic conditions, excessive drainage, and steepness of relief). Irrigation systems are rarely practical in rRS soils. These soils are unsuited for cultivation.

Rough broken and stony land may be built upon if adequate attention is given to drainage patterns, slope and stability. These areas should be carefully surveyed and studied prior to any development.

GEOLOGIC BASE

The geologic base of the Mahinahina site is compsed of two major types of rock. The first is Wailuku series igneous basalts which dip 5° to 20° toward the coast. These basalts are very highly permeable and are part of West Maui's chief aquifer. Wells sunk into these basalts may yield slightly brackish water along the southern and southwestern West Maui coast.[5]

The second type of rock is recent sedimentary rock approximately 75 feet in thickness. This sedimentary rock is composed of unconsolidated deposits primarily of younger alluvium consisting of poorly sorted brown silts, sands and gravels. Marine deposits may occur near the coast. Wells dug near the coast may yield fresh water.[6]

RAINFALL

Approximately one quarter mile from the Mahinahina site is an official rain gauge which has been in operation since 1927. This rain station, station number 458 located at #12 Kahana Camp at an elevation of 50 feet above sea level, gives a good approximation of the annual rainfall at the Mahinahina site. The median annual rainfall at station #458 is 31.0 inches per year. The median monthly rainfall pattern is shown in Figure 5.[7]

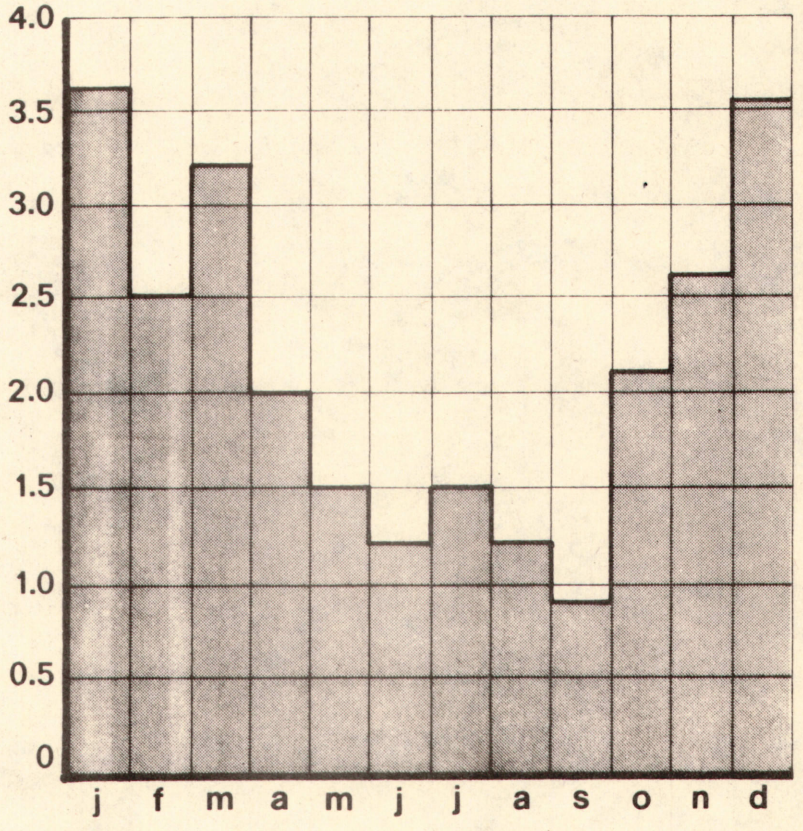


figure 5: median monthly rainfall in inches

HYDROLOGY

The hydrologic character of the Mahinahina Mauka site involves three major factors: sub-surface water, surface drainage and flood conditions, including tsunami innundations. Climate is the major determinant of the hydrology of an area; topography and geologic base have direct influence upon the movement and distribution of surface and sub-surface waters within the area.

SUB-SURFACE WATER

The sub-surface water of the Mahinahina site is basal ground water floating upon ocean water which has intruded into the island's rock formations below sea level. This stored ground water is the result of surface waters percolating through the permeable island soils and rocks until it reaches intruded salt water. The fresh water then floats upon the salt water because of its lesser density and forms fresh water lenses known as Ghyben-Herzberg lenses.[8]

The basal ground water of the Mahinahina Mauka site lies at a depth of greater than 5 feet and can be expected to be slightly brackish.[9] A small private well dug approximately 10 years ago directly *makai* of the site yielded slightly brackish water which was suitable for irrigation of hardy landscape material.

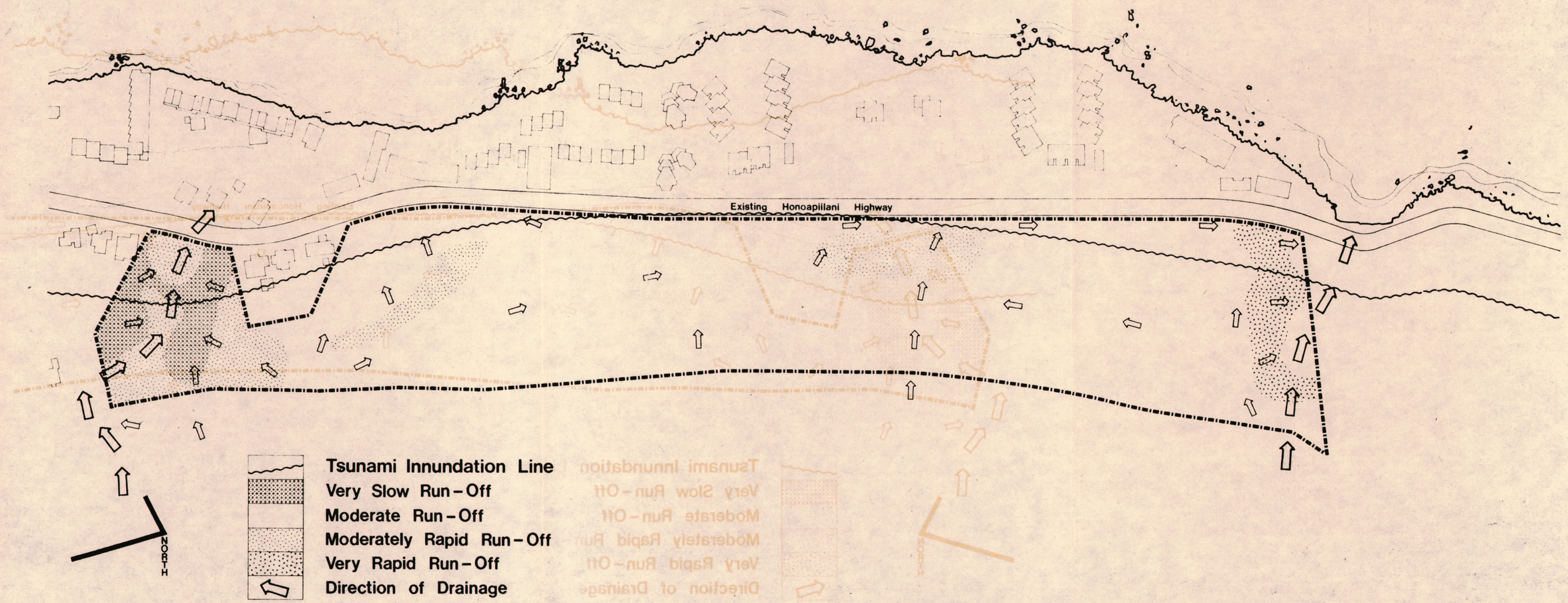
SURFACE DRAINAGE

Surface drainage patterns follow the slope of the site. The site generally drains from the east to the west. The northernmost portion of the property drains into an unnamed gully, an intermittant natural drainage channel which is normally dry. The southernmost portion of the site is associated with the Mahinahina gulch drainage area. Mahinahina stream, which flows at an average 13 percent slope in the gulch, is listed in the General Flood Control Plan for Hawaii as a major stream. The existing drainage pattern of the lower part of the Mahinahina gully will be altered by a new drainage channel which will be described later.

The hydrology map (Figure 6) indicates the surface drainage patterns of the Mahinahina site. Areas of either rapid or very slow run-off are also included to indicate drainage problem areas. The areas of rapid run-off denote potential erosion hazards; areas of slow run-off denote potential ponding or marshy conditions. The drainage path which runs longitudinally across the site, seemingly in opposition to the site's topography, follows the slope of an existing dirt-surfaced cane haul road (Figure 7).

FLOOD CONDITIONS

A tsunami innundation line has been established for all the islands in the state to indicate those areas most susceptible to innundation. The bulk of the Mahinahina Mauka site lies outside of the established tsunami innundation zone. Only the lowest parts of the site located in the southernmost area and along the northern part of the *makai* boundary are included in this zone (Figure 6).

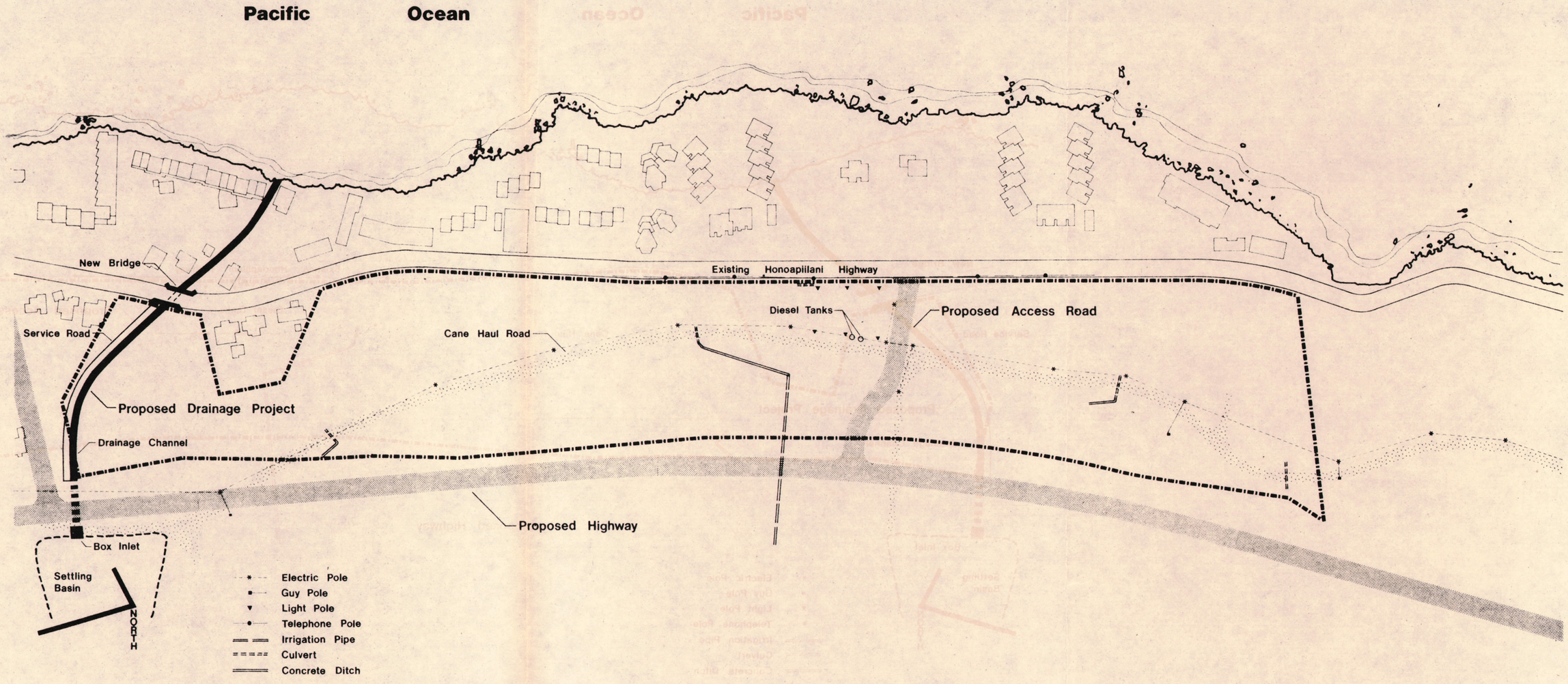


J.two
planning and design consultants

100' 400' 800'

Mahinahina P.U.D.
proposed

Hydrology



J.two
planning and design consultants

100' 400' 800'

proposed

Mahinahina P.U.D.

Man Made Features

Floods caused by excessive rainfall generally occur in the winter months; records in the Islands have indicated that January has the highest monthly frequency of flood occurance.[10] Hawaii's climatic characteristics of very high rainfall intensities and of very steep rainfall gradients are responsible for the localized flash flood conditions which occur in the Islands.

The Mahinahina Mauka site is included in the West Maui Flood Program as part of the Lahaina watershed. This program, one of several on West Maui, includes the 26.3 square mile area between Kaanapali and Honokahua, the West Maui mountains and the ocean. There are several major streams in the program area, including Mahinahina stream, and numerous intermittant streams which are often without official names. The average slope of this sub-watershed area is 13 percent. Several damaging floods have occurred in the program area; most of the damage has been caused by debris flooding, sheet erosion, and bank overtopping and erosion.

PROPOSED MAHINAHINA DRAINAGE CHANNEL

A drainage channel that cuts through the southernmost portion of the Mahinahina site is proposed as part of the Honolua Watershed (Lahina sub-watershed) Project. This project is administered by the County of Maui with technical assistance and partial funding by the Federal government. The watershed project will be installed during a 5-year period with construction sequentially coordinated with the proposed Honoapiilani Highway realignment.

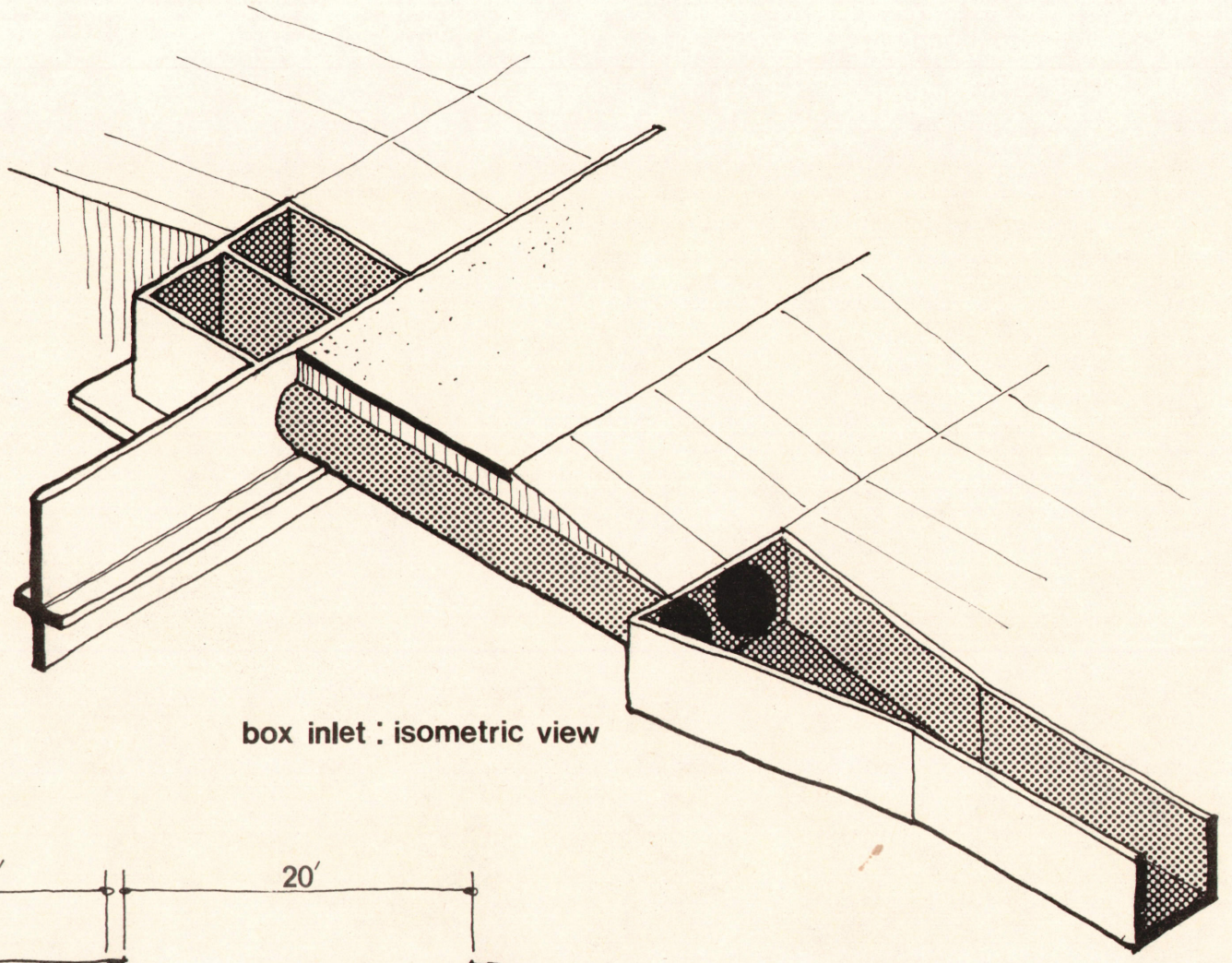
The Mahinahina section of the Honolua project includes a debris basin *mauka* of the propsed highway realignment which will discharge through a box inlet spillway into a conduit under the road bed and into a concrete lined channel (Figure 7). As presently designed, this channel will be square walled, constructed with reinforced concrete, 20 feet in width and between 8 feet and 11 feet in depth (Figure 8). A 13-foot wide service road adjacent to the channel will be required.[11] This design dictates a 26-foot easement or a fee simple right of way through the site.[12]

Design alternatives for the drainage channel are acceptable as long as they fulfill the minimum design requirements established. Additional construction costs must be borne by the land owner. An alternative suggested by the Soil Conservation Service is a double boxed, closed conduit system which should receive soil cover and light landscaping. This system would necessitate a 26-foot wide easement clear of buildings, removable inspection covers in two locations, and an expense to the land owner of approximately $150.00 per lineal foot[13] over roughly 300 feet.

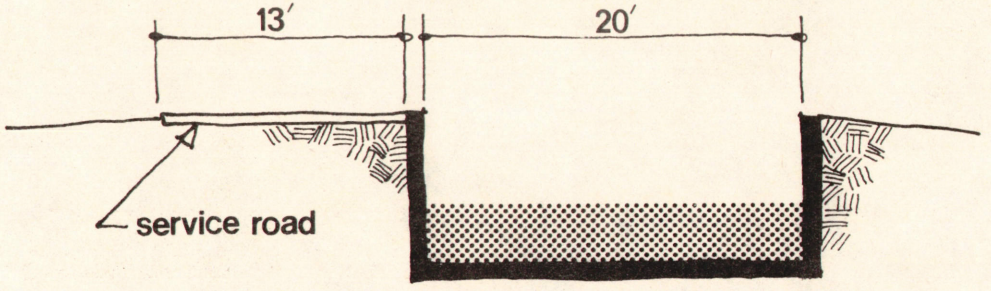
Other Honolua Watershed Project construction pertinent to the Mahinahina Mauka site includes a new bridge for the existing Honoapiilani Highway where it will cross the new drainage channel, and an additional debris basin to the north of the site.

VEGETATION

The Mahinahina site has three distrinct types of vegetative cover. The first and largest in extent is cultivated sugar cane fields. The second and



box inlet : isometric view



typical cross section

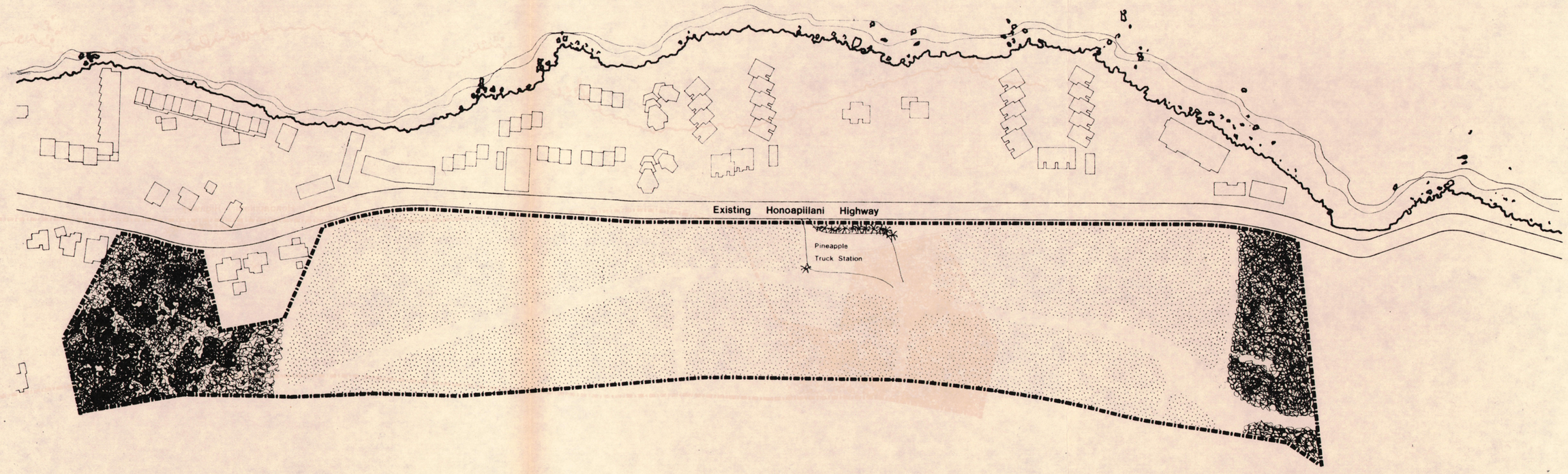
Mahinahina drainage channel figure : 8

smallest in extent is a landscaped area surrounding a pineapple truck station located at the intersection of Honoapiilani Highway and the cane haul road which runs roughly through the center of the site. The third type is natural scrub growth occurring on the portions of the site where sugar cane cultivation is not feasible due to unfavorable topographic or soil conditions.

The landscaping around the small pineapple truck station primarily includes a row of coconut palm trees *(cocos nucifera)* and plantings of allamanda *(allamanda cathartica)*. There are approximately 12 coconut trees which range from 15 to 20 feet in height.

Scrub growth on both the northernmost and southernmost parts of the site includes several species of plants which can thrive in the natural soil and climatic conditions. This scrub growth is primarily located on the most steeply sloped areas of the site and helps to retard erosion in these areas. The following list was obtained by site inspection and is not complete as not all parts of the scrub growth were explored.

COMMON NAME	HAWAIIAN NAME	SPECIES
cassia	*klu*	*Acacia farnesiana*
aloe	---	*Aloe sp.*
Bermuda grass	---	*Capriola dactylon*
feather fingergrass	---	*Chloris virgate*
lantana	*lākana*	*Lantana camara*
haole koa	*koa haole*	*Leucaena glauca*
pride of India tree	---	*Melia azedarach*
Manila tamarind	*opiuma*	*Pithecellobuim dulce*
algaroba, mesquite	*kiawe*	*Prosopis pallida*
castor bean plant	*kolī*	*Ricinis communis*
ilima	*'ilima*	*Sida fallax*
false vervain	*oi*	*Stachytarpheta dichotoma*



J.two
planning and design consultants

100 400 800'
proposed

Mahinahina P.U.D.

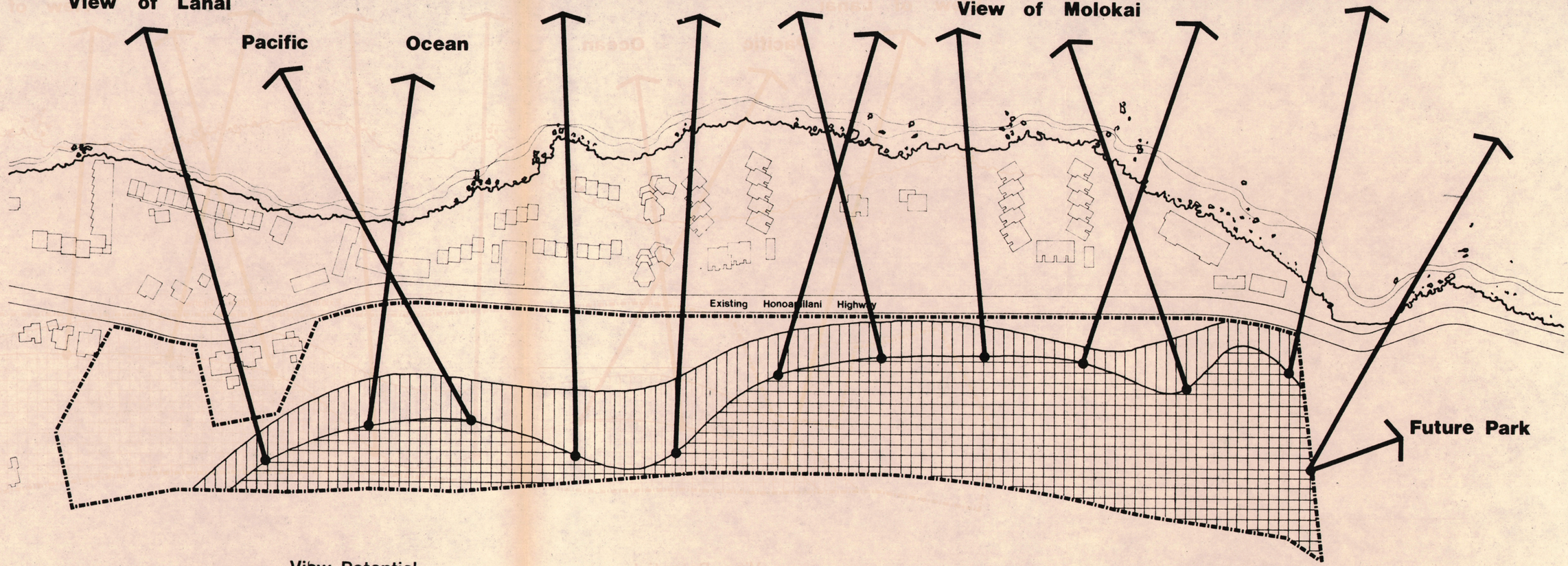
Vegetation

Except for select specimens of pride of India Trees, aloes, kiawe trees, opiuma trees, and other select leguminous shrubby trees, most of the scrub growth has little, if any, ornamental landscape value.

MAHINAHINA SUBJECT SITE: POTENTIAL VIEWS

Ocean views from the Mahinahina subject site are obscured somewhat by the *makai* resort condominium projects. Potential views of the ocean and the islands of Lanai and Molokai are possible from the higher elevations of the site. Figure 10 indicates those portions of the site where residences of one or two stories could exploit ocean views. This delineation will, in the future, vary slightly when final site grading occurs and when the two private residences *makai* of the site are replaced with higher density uses.

Mountain views, which have only infrequently been considered in local development, can hopefully be utilized, although the relative availability of these views is difficult to assess at this time. Mountain view potential can be better assessed following finalization of plans for the Honoapiilani Highway realignment.



J.two
planning and design consultants

100' 400' 800'

proposed

Mahinahina P.U.D.

Ocean View Potential

SITE PLANNING RECOMMENDATIONS: NATURAL DETERMINANTS

SECTION	ITEM	RECOMMENDATION
PHYSIOGRAPHY	topography map is insufficient for detailed design work	a more detailed survey should be initiated following redistricting
	site slopes westward toward ocean and evening sun	emphasize view amenity where possible while providing protection from glare
	central part of site is a sloping plain while the north and south ends are of irregular topography	an opportunity exists to create three sub-areas, each with a distinct character
	site includes some areas with slopes of 15% or greater	these areas can be built upon if adequate attention is given to drainage, erosion hazards, building form and creation of roads of manageable grades
	approximately 80% of the site has slopes of 15% or less	these areas are readily developable, although potential views should be exploited and attention should be given to drainage of flat areas
SOILS	surface run-off is slow for Lahaina and Ewa soils	grade for drainage
	permeability of Lahaina and Ewa soils is moderate to good	no special precautions are seen as necessary
	Lahaina and Ewa soils are suited to residential development according to U.S.D.A.	standard building practices and foundations may be utilized on soils of these series
	surface run-off is rapid and probability of erosion hazards is high on rRS soils	minimize elapsed time between site grading, construction and establishment of landscape materials
GEOLOGIC BASE	geologic base of site is composed of two types of rock with moderate to high water carrying capacities	(1) investigate possibility of utilizing groundwater sources for irrigation of landscape material

SECTION	ITEM	RECOMMENDATION
GEOLOGIC BASE (cont.)		(2) care should be taken to recharge groundwater supply and prevent pollution of groundwater supply
HYDROLOGY	the site is subject to high intensity rainfall	plan site drainage accordingly
	portions of the site are subject to tsunami innundation	minimize siting of housing lots in these areas; re-grade and site recreation facilities in these areas
	a drainage channel is planned for the southern portion of the site	accept lessened density in this area; investigate the possibility of utilizing the channel inspection road for unit access
CLIMATE	tradewinds originate from the northeast to east	plan and orient housing units to exploit the tradewinds; bedrooms, especially, should be oriented to the tradewinds
	sea-breezes are frequent from the west	plan and orient housing units th exploit the sea-breezes; living areas, especially, should be oriented toward the sea-breezes
VEGETATION	there are significant coconut trees on the central portion of the site	attempt to retain these trees for landscape purposes
	the existing scrub growth potentially contains vegetative species of ornamental value	further identify any usable landscape material existing on the site
VISUAL	the makai apartment developments adjacent to the site are of a greatly hetrogeneous character	attempt to blend site design with extant development
	the ocean view potential is greater on the northern half of the site, especially along the sloped bank	this portion should be considered as prime for development; higher densities and higher cost units would be best sited here
	the southernmost portion of the site lacks ocean and mountain views, as well as being characterized by "bowl shaped" physiography	exploit the site character to develop an inward-facing unit cluster with a central amenity area

Section II: Human Use and Development

ECONOMIC BASE

POPULATION

LAND USE REGULATION

ZONING

CURRENT WEST MAUI HOUSING SITUATION

CIRCULATION

UTILITIES AND SERVICES

ECONOMIC BASE OF THE LAHAINA DISTRICT

As has been for the entire state, the general trend in the Lahaina District has been rapid economic growth since statehood in 1959 and a shift away from agriculture as the major support industry toward tourism. This changeover from agriculture to tourism has been a recent occurrence in West Maui, and the forecast for the tourist industry is a pattern of high growth rates.

RATIO OF BASIC TO NON-BASIC EMPLOYMENT

The ratio of basic (export) employment to non-basic (required for the support of the Lahaina area itself) employment was approximately 4.71: 1.00 in 1964, which is not unusual for a semi-rural area with a large proportion of agricultural employment. The economic forecast included in the General Plan for the Lahaina District indicates an employment that would yield a basic to non-basic employment ratio of approximately 1.98 : 1.00[14], a ratio which might be expected of a small urban area.

EMPLOYMENT DISTRIBUTION

The trends in employment distribution for Lahaina from 1965 to 1990 as projected in the General Plan are given in Figures 11 and 12.[15]

AGRICULTURE

Agricultural employment is projected to decline over 50% over the period from 1965 to 1990. Sugar cane and pineapple cultivation and processing remain the largest agricultural industries in the Lahaina District.

It is estimated that in West Maui the sugar industry employs approximately one person per each 17 acres in cultivation.[16] Excluding cane haul roads, the pineapple truck station and scrub growth areas, the Mahinahina Mauka site includes roughly 17 acres which are currently in sugar cultivation. Hence the site provides employment for approximately 1.0 sugar cane industry employee. Considering the basic to non-basic employment ratio, which (utilizing the figures and forecasts presented in the Lahaina District General Plan) would be, by interpolation, 3.13 : 1.00 in 1975, the Mahinahina Mauka site is presently responsible for a total employment of about 4.13 persons.

TOURISM

Tourism is a recent industry in Lahaina and has shown a rapid rise toward becoming Lahaina's major supportive base.

From an insignificant role in supplying hotel accommodations in the 1950's, Lahaina had cornered 63% of the market on Maui by 1967. It is predicted that despite resort developments on East Maui such as the Wailea resort, the Lahaina District will maintain its edge on the market and will continue to lead Maui's resort development at least through 1990. The number of visitor-days and the hotel demand are both expected to rise steadily on Maui at least through 1990.[17]

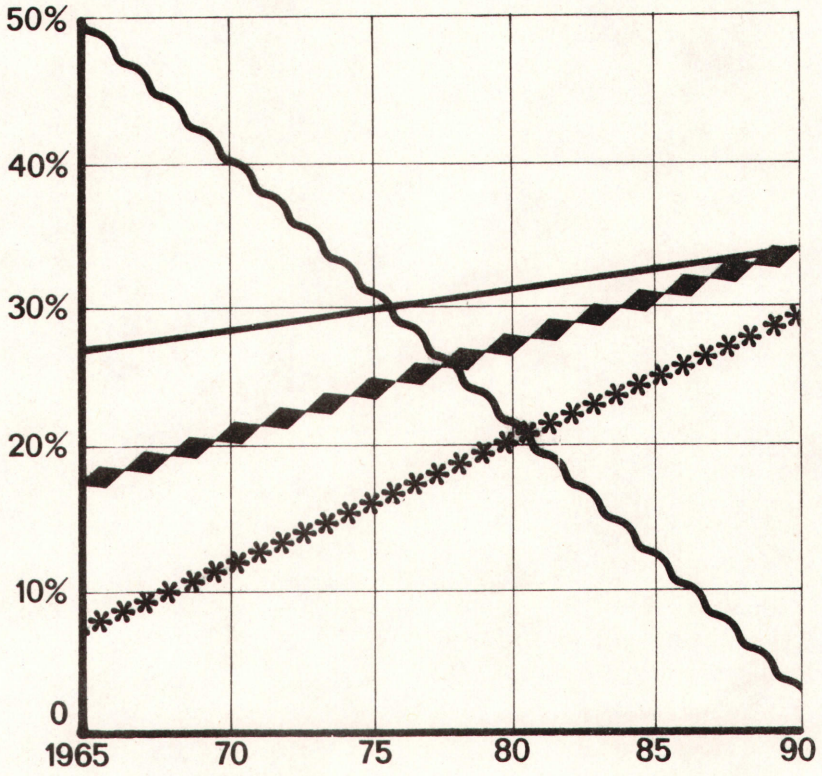


figure 11: percentage of total employment by category

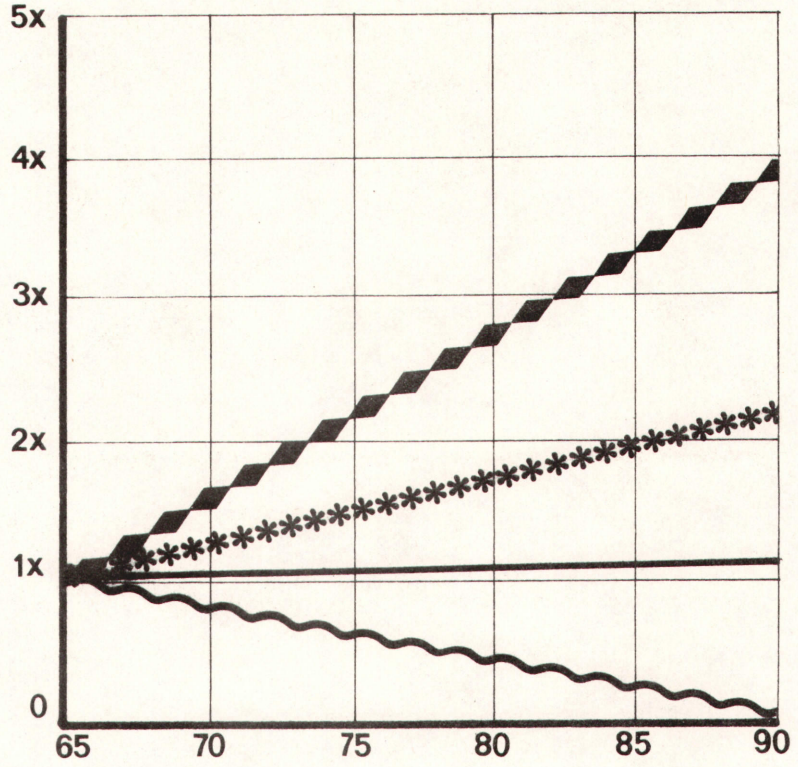


figure 12: proportional change in employment by catagory

hotel
visitor support
non-primary
agriculture

Visitor-support employment, as shown in Figures 11 and 12, is predicted to increase almost 31 times between 1965 and 1990 while hotel employment is expected to increase almost 11 times.[18] Both figures indicate a rapid growth pattern for the industry now providing the major supportive base of the Lahaina District.

TOTAL EMPLOYMENT

The total employment in the Lahaina District is expected to show a fairly sharp increase over the next two decades. In 1964 Lahaina's labor force included approximately 2,000 persons; in 1990 the labor force is predicted to have increased eightfold to an estimated 16,000 persons.[19]

POPULATION

The 1970 Census of Population lists the island of Maui as having a population of 38,691 persons. The 1970 population of the island of Maui comprised 5.03% of the total population of the State of Hawaii. Maui's population per square mile in 1970 was 55.3 persons per square mile, compared with 121.7 persons per square mile for the State of Hawaii and 3,993.8 persons per square mile for the City of Honolulu in the same year.[20]

The entire State of Hawaii has shown a period of growth since its statehood in August 1959. Over the decade from 1960 to 1970 the state experienced a 21.6% population increase. Honolulu County led the growth with a 25.0% population increase and was followed by Maui County with a 7.7% population increase. Lahaina, the largest town in West Maui with a 1970 population of 3,718 persons, showed an 8.6% population increase from 1960 to 1970.[21]

The population of Maui County, as shown in the following table, is slightly older than the population of the entire state. Significant are Maui's comparatively high percentages of persons in the 45 to 64 years and the 65 years and older age groups, and Maui's comparatively low percentage of persons in the 18 to 24 years age group. The fairly large percentage of late middle-aged to elderly persons may be partially accounted for by Maui's increasing status as a resort-retirement area.

TABLE 3. 1970 POPULATION BY AGE, MAUI COUNTY AND STATE OF HAWAII[22]

	COUNTY OF MAUI		STATE OF HAWAII	
Age Group	Number	Percent	Number	Percent
Under 5 years	4,035	8.8	70,811	9.2
5 to 17 years	12,695	27.7	203,818	26.5
18 to 24 years	4,129	9.0	109,228	14.4
25 to 44 years	10,385	22.6	202,621	26.4
45 to 64 years	10,473	22.8	137,967	18.0
65 years or over	4,169	9.1	44,116	5.7
Total	45,886[23]	100.0%	768,561	100.0%

LAND USE REGULATION

Competing economic interests in the use of the limited portions of Hawaii's land which are inherently the most easily developed have made the need for responsible regulation of land usage obvious. Coastal and upland plains, often with soils of high agrigultural suitability, frequently offer areas which are easily developable for either urban-oriented or agricultural uses. Sand beach areas which may be viewed as ideal for private resort or second-home developments may also be desired for public recreational uses. While agricultural enterprises are needed to provide a fairly stable economic base, urban development is necessary to attract and house a labor force appropriate to all of Hawaii's general needs, and while local public recreational and cultural needs must be satisfied, it is currently the tourist-resort industry that provides a substantial amount of the State's revenue and livelihood. Additionally, some land areas need to remain undeveloped to insure that the State's potentially depletable resource of natural scenic beauty is preserved and to maintain adequate open space.

As a result of the intensity with which land issues are treated in Hawaii and of the numerous apparent conflicts in land usage, several regulatory measures have been adopted by the State of Hawaii. One of the most sweeping of these is the Land Use Law of 1961. The Land Use Law originally established 3 land use districts and their specific boundaries, the controlling agencies for each district, and the State Land Use Commission. The Law was amended in 1963 to include a fourth land use district by the inclusion of a rural use district. The 4 districts and their respective jurisdictional agencies are as follows:

TABLE 4. STATE LAND USE DISTRICTS.

DISTRICT	LAND USE JURISDICTION
Urban	County government
Rural	Jointly by State Land Use Commission and County government
Agricultural	Jointly by State Land Use Commission and County government
Conservation	State Department of Land and Natural Resources

The boundaries of the land use districts are determined by the State Land Use Commission (LUC). At 5 year intervals, beginning in 1969, the LUC is required to make a comprehensive review of all land use districts throughout the State and may make district boundary changes as deemed necessary by the review. Boundary changes may also be made upon petition to the LUC by any land owner and lessee or by any State or County agency.

MAHINAHINA MAUKA SITE

As can be seen in Figure 13 the Mahinahina Mauka site is currently in a State Agricultural District. In accordance with the permissible land uses specified for Agricultural Districts by the State Land Use Law, the site cannot be used for residential development. The Mahinahina Mauka site can be utilized for residential land usage only if the site is redistricted from a State Agricultural District to a State Urban District by the LUC.

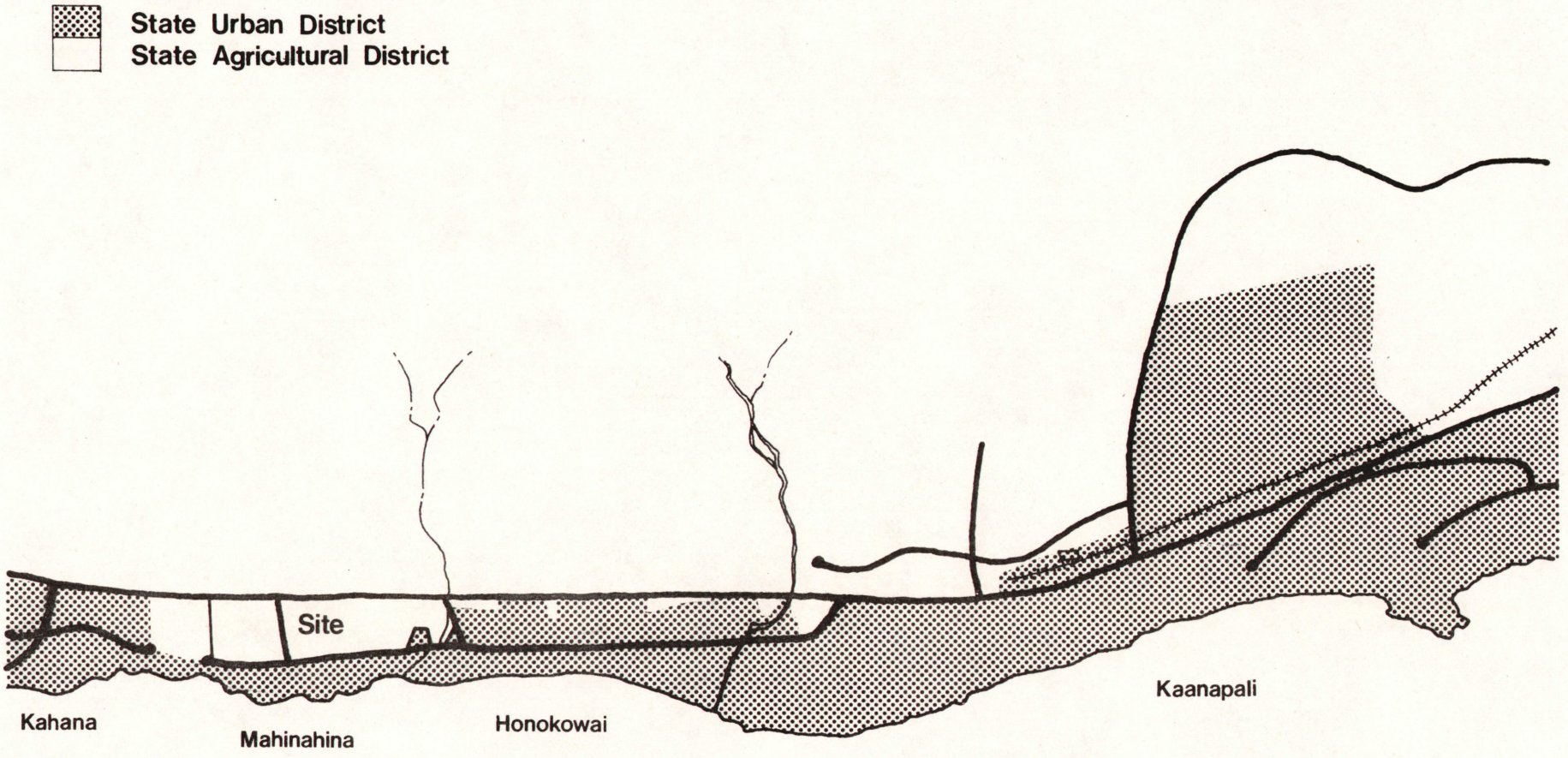
RELATIONSHIP OF THE MAHINAHINA MAUKA SITE TO DISTRICT BOUNDARY CHANGE POLICIES

A proposal to redistrict the Mahinahina Mauka site from a State Agricultural District to a State Urban District generally meets the apparent intent of the boundary change policies expressed in the Land Use Law and in the 1969 and 1974 comprehensive reviews. The following will be a brief discussion of the relationship of the site to district boundary change policies.

LAND USE LAW

The requirements which must be met by a petitioner for a boundary change to be granted are given in Part 11, Subpart F, Section 2.31:

> "The Commission may permit amendment to any district boundary provided that the petitioner has submitted proof that the area is needed within the next five year period for a use other than that for which the District in which it is situated is classified and provided that either one of the following requirements has been fulfilled:



State Land Use Districts

figure 13

(a) The petitioner has submitted proof that the land is usable and adaptable for the use to which it is proposed to be classified; or

(b) Conditions and trends of development have so changed, since the adoption of the existing classification, that the proposed classification is reasonable.

The Commission shall not approve any amendments to the district boundaries that would be contrary to the objectives sought to be accomplished by the Land Use Law and Regulations."

Regarding these requirements, the owners of the Mahinahina Mauka site, who will be petitioning for a redistricting of their property, can substantiate the following, thereby meeting the stated requirements and intent of the Land Use Law:

(a) The Mahinahina Mauka site is needed for urban use within the next five years. The sections of this report which discuss economic growth, population trends and the housing situation especially indicate the need for housing specifically intended for middle-income, local families. If housing aimed at this local market can be successfully integrated with a second-home-investment market on the Mahinahina Mauka site, the result will be some alleviation of a housing deficit along with an increase in the tax base of the area.

(b) The Mahinahina Mauka site is usable and adaptable for urban use, specifically residential use. As shown by the natural systems inventory, the site is suited for residential use. The soil is well suited for low building foundations and for roadbeds, and with proper attention to slope, view and drainage, the site could provide a very attractive housing development. As indicated in the sections on Circulation, Location and Utilities, the Mahinahina Mauka site is located near a major employment center, near existing recreational and educational institutions, and is in an area where utilities and roads not only exist, but also are in the process of being substantially upgraded. Hence, public improvements and expenditures would not be necessitated by residential development of the site. The site, additionally, is located in a rapidly urbanizing area and can easily "adapt" to the urban context which exists on all but the *mauka* boundary of the property: apartments and single-family homes *makai* and south of the site; a potential park, and hotel and apartment units under construction north of the site.

(c) The completion of the realigned Honoapiilani Highway will significantly change the development context of the Mahinahina Mauka site. When the new highway is installed, the portions of the site which are currently in sugar cane cultivation will be isolated from the surrounding cane fields; the site will become an agricultural "island," bounded by the existing and realigned highways and adjacent to urban development.

1969 REVIEW

During the 1969 Land Use Districts and Regulations Review, several recommendations for land use district boundary changes were made for each county. Among the recommendations for Maui County was the following:

Lahaina Judicial District

"Included in the Lahaina Judicial District are Honolua-Honokohau, Mailepai, Honokowai and Lahaina Urban Districts. No changes have been recommended in the Honolua-Honokohau, Mailepai area. It is suggested, however, that when changes in the alignment of the Honoapiilani Highway occur, the area *makai* of the highway corridor be considered upon application for urban zoning in conformance with the newly adopted County General Plan."[24]

The above recommendation is directly applicable to the Mahinahina Mauka site, which is located between the existing Honoapiilani Highway and the proposed realigned Honoapiilani Highway corridor. Hence, urban redistricting of the Mahinahina Mauka site is conformance with this recommendation.

1974 REVIEW

The 1974 review set forth a number of policy statements regarding boundary changes; examination of these statements does not reveal any major conflicts posed by redistricting the Mahinahina Mauka. The following policy statements were extracted from the LUC Staff Report.

(a) "Protection of agricultural lands from unnecessary urbanization." Although the portions of the Mahinahina Mauka site are in agricultural use, continuation of such use is being made more difficult by the highway realignment and by adjacent urban development. It would seem most logical to concentrate needed urban expansion near existing urbanized areas in order to protect large segments of agricultural lands. Efforts to preserve agricultural lands should be directed on a large scale approach and not scattered over relatively small, isolated parcels of land -- as the Mahinahina Mauka site will become following the highway realignment.

(b) Location in an area which is proximate to a trade/employment center. The staff report indicates that "proximity to centers of trading and employment...are to be taken into account" in considering proposals for redistricting to urban use. The Mahinahina Mauka site is located within 5 miles of the Lahaina-Kaanapali area, described in the staff report as the "second largest trade center" on Maui; and the Napili-Kapalua area, which is rapidly growing as a resort/employment center.

(c) Location in an area where improvements are planned or extant. The staff report indicates that in cases where redistricting of land to urban usage is petitioned, greater consideration should be given to parcels of land located near planned or existing improvements. The Mahinahina Mauka site is located in an area where major highway improvement and the installation of a sewer system are scheduled for completion within five years; enlarged

police, fire and civic center facilities have been recently constructed; school facilities currently exist and are scheduled for improvements; and a 10 acre county park is planned for the parcel of land immediately north of the site.

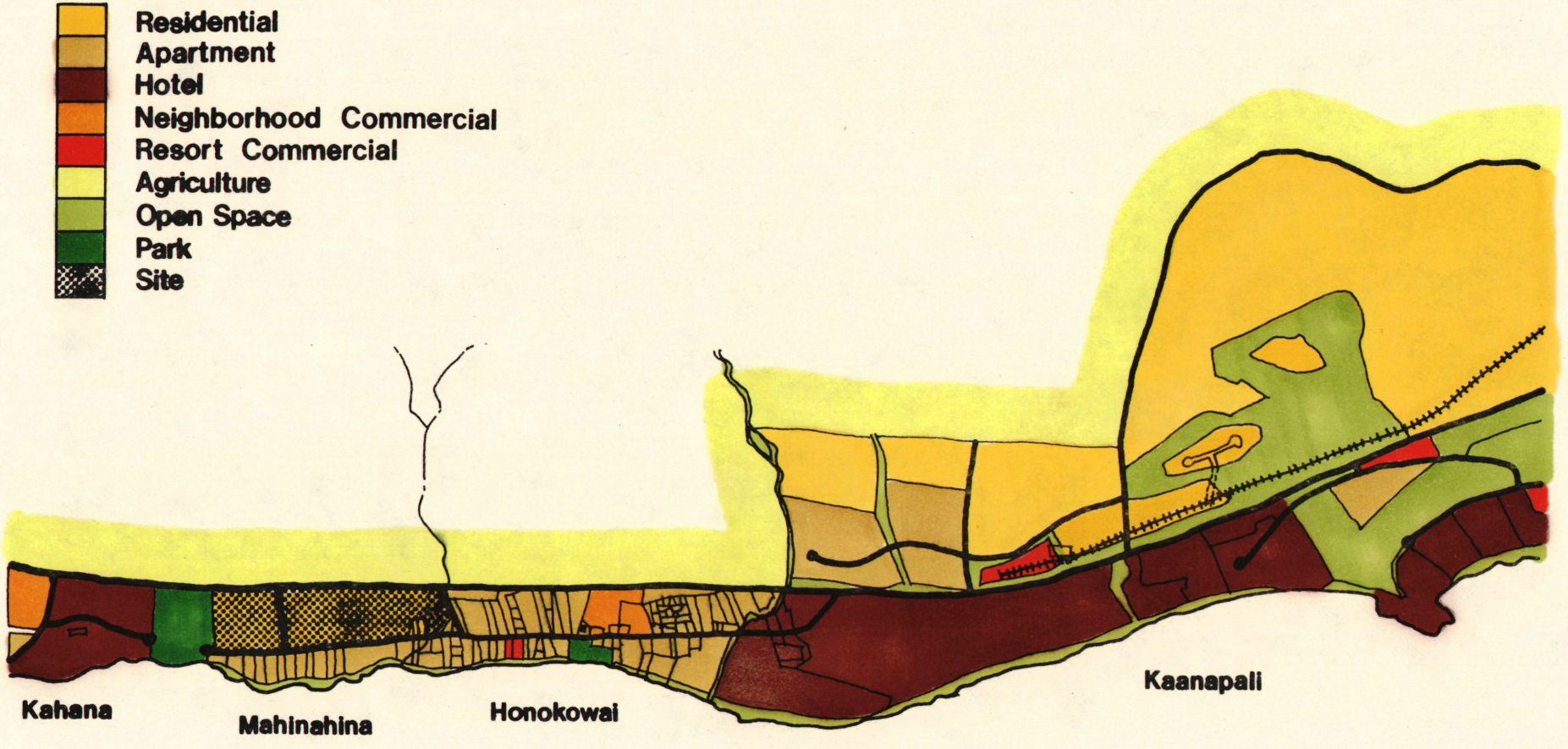
(d) Location in a "partially-developed area." The staff report states that "in determining urban growth for the next ten years, or in amending the boundary, lands contiguous with existing urban areas shall be given more consideration than non-contiguous lands." The Mahinahina Mauka site is contiguous with urban-districted lands which have been developed under R-3 and A-1 zoning. The site is within one quarter mile of the Kahana area hotel (H-2 and H-M) zone. Development of the Mahinahina Mauka site would simply "fill-in" an area surrounded on three sides by urban development and bounded by the realigned highway on the fourth side; development of the site will not "contribute toward scattered spot urban development."

(e) "Utilize the land resources in an intelligent effective manner based upon the capabilities and characteristics of the soil and the needs of the economy." Both the fact that the soils underlying the Mahinahina Mauka site are well suited to urban residential development, and the need for middle-income housing on West Maui are well substantiated. Although the Lahaina and Ewa series soils of the site are suitable for agriculture, contiguous urban development and the alignment of the new Honoapiilani Highway and lateral connector make preservation of this isolated, agriculture-zoned parcel of land unfeasible, and contrary to the apparent intent of both the Lahaina District General Plan and the Land Use Law.

(f) Conformance with the county general plan. The staff report indicates that greater consideration in boundary change petitions should be given to parcels of land which are indicated for the petitioned use on existing county general plans. The Mahinahina Mauka site is shown in the current (1968) Lahaina District General Plan, as being proposed for residential (R-3) and apartment (A-1) land uses. (Figure 14) The Lahaina District General Plan has been officially adopted as part of the Maui County general plan.

The bulk of the site is proposed for R-3 residential zoning, and the southernmost portion of the site is proposed for A-1 apartment zoning. As the exact delineation between the two proposed zones is not clear, it will be assumed, until such time that the exact boundary is determined, that the proposed apartment-zoned area amounts to 3.88 acres, which is the total acreage of parcel IV, the southernmost of the four acquired parcels of land comprising the Mahinahina Mauka site.

As a petition to redistrict the Mahinahina Mauka site would be in conformance with the Lahaina District General Plan, the following will be a brief description of Maui County regulations regarding the land use classifications proposed for the Mahinahina Mauka site shown in the General Plan and regarding planned development.



Proposed Land Use

figure : 14

R-3 RESIDENTIAL ZONES

R-3 residential zones require the largest minimum lot area of all allowed urban residential zones in the County of Maui. A minimum 10,000 square foot lot is required, allowing a maximum density of 4.36 units per acre in R-3 zones. Maximum building height and minimum lot width for R-3 zones are given in Table 6; front, side and rear yard spacing requirements and the section on residential zones of the Maui County Zoning Ordinances are given in Table 7.

A-1 APARTMENT ZONES

A-1 apartment zones have the lowest maximum floor area ratio and lowest maximum lot coverage of Maui's apartment zones. Maximum allowable lot coverage is 25% for A-1 zones. The maximum allowable floor area ratio is 30% for lots of less than 3 acres and is 40% for lots of 3 or more acres. Maximum building height and minimum width for A-1 zones are given in Table 6; front, side and rear yard spacing requirements are given in Table 7.

PLANNED DEVELOPMENT

If redistricted by the LUC from a State Agricultural District to a State Urban District, the Mahinahina Mauka site would be eligible for planned development zoning contingent upon approval of development plans by the Planning Commission. To be eligible for a planned development, a site must be situated in a State Urban District and contain a minimum area of 3 acres. It will be assumed here that if the Mahinahina Mauka site is redistricted to a State Urban District, the proposed land use zones shown in the 1968 Lahaina District General Plan will be applied to the site and used as a basis for determining the maximum allowable development potential for the site under planned development zoning.

Where a property proposed for planned development zoning includes two or more underlying zoning districts, as the Mahinahina site would, the Maui County Zoning Ordinance indicates that the densities and dwelling units allowed by all of the pertinent zoning districts may be intermixed over the entire property, providing that the total density of the intermixed development does not exceed the sum of the allowable densities of each of the zones. [Section 8-1, 17(d)(7)] The total maximum development density which would be allowed on the Mahinahina site, then, would be the sum of the maximum densities for the area proposed for A-1 zoning and the area proposed for R-3 zoning. If approved as a residential planned development, the Mahinahina site would be allowed a 10% increase in over-all density and clustering of up to five dwelling units based upon the net area of the site proposed for R-3 zoning. The maximum density for the part proposed for R-3 zoning would be 109 units, based upon a net area of 22.9 acres (27.8 acres total minus 3.88 acres proposed for A-1 zoning minus 1.05 acres to be used for the lateral connector road adjoining the realigned Honoapiilani Highway) and a maximum density of 4.79 units per acre (4.36 units per acre plus a 10% increase of .43 units per acre). The maximum development density for the area proposed for A-1 zoning would be based upon a maximum 25% lot coverage and a 40% maximum floor-area ratio. As the portion of the site proposed for A-1 zoning has an area of less than 10 acres, no increase in density can be expected for apartment planned development.

ZONING

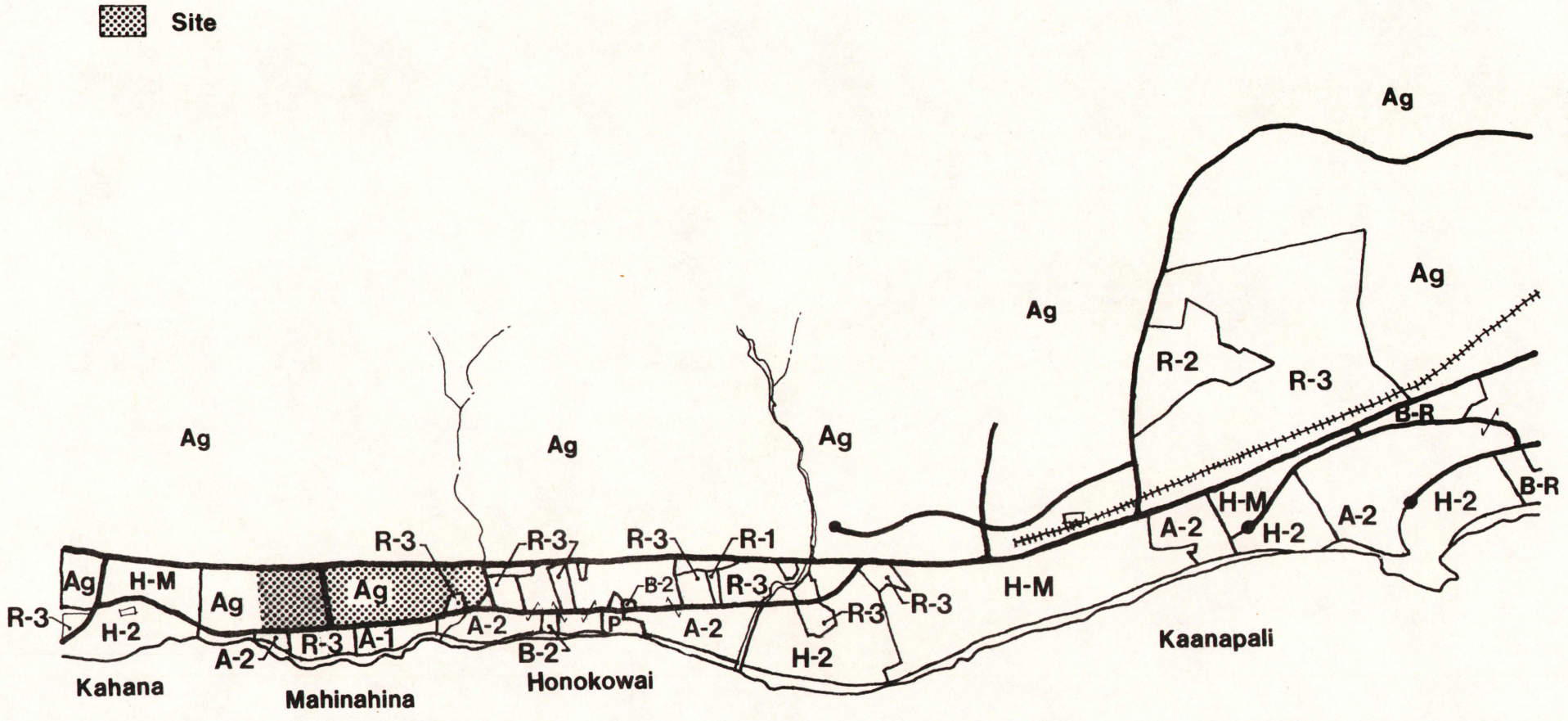
EXISTING ZONING

The Mahinahina Mauka site falls within the boundaries of the State Agricultural Use District and is currently designated an agricultural zone by Maui County. This zoning classification requires a minimum lot area of two acres and does not permit structures that are not directly associated with agricultural practices or farm dwellings.

The existing zoning in the vicinity of the Mahinahina Mauka site is shown in Figure 15; explanation of the zoning classifications are given on Table 5. The development restrictions imposed by residential and apartment zones are given in Tables 6 and 7.

TABLE 5. USE ZONES IN THE VICINITY OF THE MAHINAHINA MAUKA SITE

Use Zone	Minimum Lot Area	Minimum Lot Width	Maximum Building Height
R-1 Residential	6,000 sq.ft.	60 ft.	2 st. and 30 ft.
R-2 Residential	7,500 sq.ft.	65 ft.	2 st. and 30 ft.
R-3 Residential	10,000 sq.ft.	70 ft.	2 st. and 30 ft.
A-1 Apartment	10,000 sq.ft.	70 ft.	2 st. and 30 ft.
A-2 Apartment	10,000 sq.ft.	70 ft.	4 stories
H-M Hotel	15,000 sq.ft.	85 ft.	6 stories
H-2 Hotel	20,000 sq.ft.	100 ft.	12 stories
B-R Resort Commercial	6,000 sq.ft.	60 ft.	2 st. and 35 ft.
B-2 Business	6,000 sq.ft.	60 ft.	6 stories
Agriculture	2 acres	200 ft.	------



Existing Zoning

figure : 15

TABLE 6. MAXIMUM ALLOWABLE DEVELOPMENT IN RESIDENTIAL AND APARTMENT ZONES

Use Zone	Maximum Density	% of Lot Coverage	Maximum Floor-Area Ratio
R-1 Residential	7.26 units/acre	----	----
R-2 Residential	5.81 units/acre	----	----
R-3 Residential	4.36 units/acre	----	----
A-1 Apartment	----	25%	30% for lots of less than 3 acres 40% for larger lots
A-2 Apartment	----	35%	90%

TABLE 7.

YARD SPACING REQUIREMENTS FOR RESIDENTIAL AND APARTMENT ZONES

Use Zone	Front Yard Spacing	Side Yard Spacing	Rear Yard Spacing
R-1 Residential	15 ft.	6 ft. for 1 st. 10 ft. for 2 st.	6 ft. for 1 st. 10 ft. for 2 st.
R-2 Residential	15 ft.	same as R-1	same as R-1
R-3 Residential	15 ft.	same as R-1	same as R-1
A-1 Apartment	15 ft. for 1 and 2 st.	10 ft. for 1 and 2 st.	15 ft. for 1 and 2 st.
A-2 Apartment	20 ft. for 3 and 4 st.	15 ft. for 3 and 4 st.	20 ft. for 3 and 4 st.

CURRENT WEST MAUI HOUSING SITUATION

West Maui's housing situation is complicated by the area's increasing status as a resort destination, and the resulting interplay between local and seasonal housing demands.

HOUSING DEMAND

According to a 1967 Federal Housing Administration (F.H.A.) study:

> "Housing demand in Maui is increasing largely because of its popularity as a resort area for the booming tourist trade. Although resident household growth is forecast at only about 135 annually, the demand for secondary homes and apartments for tourists suggests an absorbtive capacity of about 450 units annually, including about 350 single-family units and 100 multi-family units, excluding demand for low-rent public housing and rent-supplement accommodations."[25]

In 1969, Robert Ohata, Planning Director for the County of Maui at the time, was interviewed by Janice Ota in relation to housing problems. According to Ms. Ota, Mr. Ohata indicated that there were approximately 5,000 sub-standard houses on Maui. He also estimated that at least 500 new houses per year were required to meet existing growth rates whereas the actual number of new housing starts was about 200-250 units per year.[26]

In the General Plan for the Lahaina District, several projections were made regarding the specific housing needs of West Maui. The General Plan indicates:

> ". . . that nearly 8,800 homes will have to be built [in the Lahaina District] by 1990. Of these, 7,900 units are to meet the requirements of new households; and 900 units are programmed to replace existing houses which, because of their age (averaging 45 years) and condition, must be razed.
>
> "Of the 8,800 total units, over 4,600 are to be for single family housing, with multiple family units comprising the balance of 4,000 units."[27]

The above General Plan projections imply that for the Lahaina District alone, an average of 400 new housing units must be constructed per year through 1990, and that these new housing starts must include an average of 210 single family units per year. The General Plan's forecasted housing demand in the Lahaina District is shown in Figure 16.[28]

> The General Plan further projects that:
>
> "As the per household income increases (along with a decrease in household size, and an increase in workers per household), a greater proportion of families should be able to purchase their own housing. Although the predominant preference in the District is for single family structures, as the makeup of the population changes, there is expected to be a trend towards condominium and rental multi-family housing."[29]

A more recent projection, shown in Table 8, was made in 1971 by Marshall, Kaplan, Gans, Kahn and Yamamoto, a private planning firm which was commissioned by the LUC to act as consultant during the 1974 5-year statewide comprehensive land use review. According to the table, private enterprise was expected to produce only about one third of the new housing units needed by Maui County in contrast with an estimated private sector production of nearly one half of the State's needed new units. In comparison with the estimated statewide private sector production, the output of new private sector housing for Maui County was expected to be more heavily weighted toward seasonal housing; more than one third of the new private sector units produced on Maui County are anticipated to be seasonal units whereas only about one fifth of the entire State's new private sector units are anticipated to be seasonal. According to the table, in 1971 the State had planned roughly two-thirds of its estimated needed subsidized housing; Maui County had less than one fifth planned. Also indicated by the table is the projection that Maui County requires slightly more housing units to repalce existing structures than new units added to the total stock.

TABLE 8. HOUSING NEEDS AND ESTIMATED PRODUCTION: 1970 to 1975.[30]

	NUMBER OF HOUSING UNITS	
TYPE OF NEED AND ANTICIPATED PRODUCTION	MAUI COUNTY	STATE OF HAWAII
A. New year-round and occasional units required to stablilize shortage	4,106	38,246
B. Estimated private sector production	1,339	16,039
1. Year-round units for families with annual incomes exceeding $10,000	839	12,589
2. Seasonal units	500	3,450
C. Publicly assisted production required to meet remaining 5 year need (A - B)	2,767	22,207
1. Subsidized units currently planned	445	14,115
2. Additional subsidized units needed for families with annual incomes of less than $15,000	2,322	8,092
D. Additional units needed to replace remaining delapidated units	4,410	26,596
E. Publicly assisted production required to stabilize shortages and eliminate delapidated stock (C + D)	7,177	48,803

HOUSING CHARACTERISTICS

General housing characteristics for Maui County are indicated in Table 9. Data for the entire state is included for comparison. As shown in the table, the percentage of families living in single family structures is significantly higher on Maui than for the State as a whole. In 1970, 91.6% of all housing units in Maui County were single family structures, compared with 65.0% of the State's total number of units. Maui County has the highest percentage of single family structures of any county in the State. The number of housing units on Maui with plumbing deficiencies is substantially higher, and the median value of owner occupied units is lower than the averages for the State, implying a fairly great number of sub-standard houses. These figures tend to substantiate Mr. Ohata's estimate that out of a 1970 total of 13,922 units, 5,000 housing units on Maui were substandard and in need of either renovation or demolition.

TABLE 9. 1970 HOUSING CHARACTERISTICS: MAUI COUNTY AND STATE OF HAWAII.[31]

CHARACTERISTIC	MAUI COUNTY	STATE OF HAWAII
Total number of housing units	13,922	216,085
Number of units occupied	12,783	203,088
Percent of units for rent or sale	1.7%	2.9%
Percent of other vacant units	6.1%	3.0%
Percent of all units vacant	7.8%	5.9%
Percent owner occupied (of occupied units)	58.5%	46.9%
Median $ value of owner occupied units	$23,500	$35,100
Population per occupied unit	3.5 persons	3.6 persons
Percent of occupied units with 1.01 or more persons per room	19.1%	19.9%
Median number of rooms per unit	4.8	4.6
Percent of units lacking some or all plumbing	13.1%	5.6%
Percent of units in one-unit (single-family) structures	91.6%	65.0%

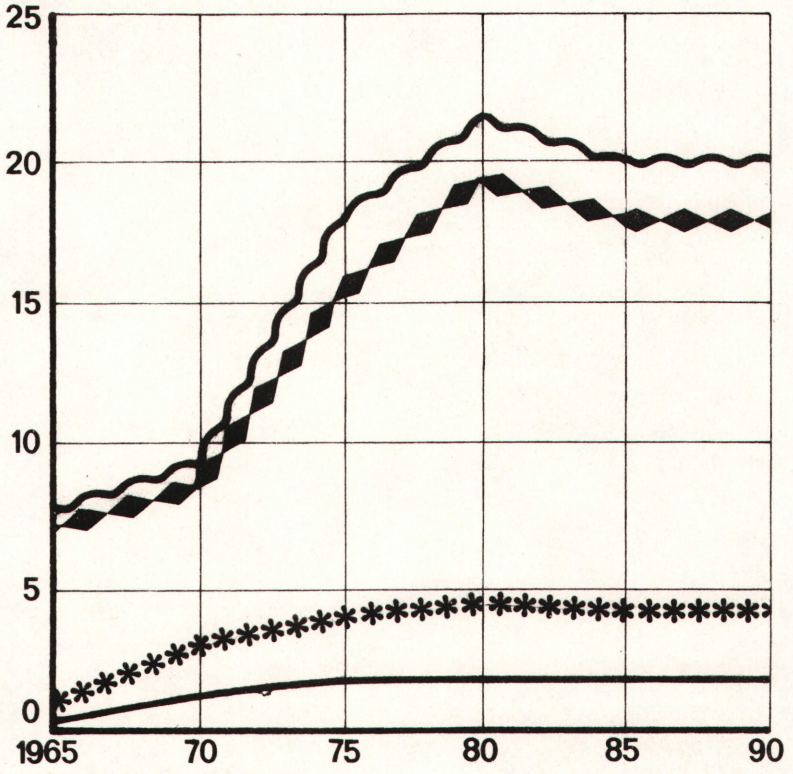


figure 16: West Maui housing demand by hundreds

housing demand
housing increase
***** annualized housing demand
demolished housing demand

HOUSING CONSTRUCTION RECORD

In general, the construction industry on Maui has shown rapid growth in the last decade. With the exception of a relatively minor statewide slump in 1970, the growth trend has been accelerating upward, and the number of housing units constructed annually has increased markedly. 1973 brought an unprecedented upsurge in Maui's construction, which showed a 50% gain in dollar value of construction over 1972. The market for resort, investment and second-home units grew at rates much higher than previously predicted. Market absorbtion was rapid and lead to 1974's construction record which, as of August 1974, had already surpassed 1973's record in dollar value.

A HOUSING ISSUE

One issue seems oddly ironic considering the voluminous output of housing units by Maui's construction industry; this is the problem of creation of adequate housing for Maui's resident population. The effect of speculation has been to limit the choice available to low and moderate income families; speculation has significantly helped to drive both land and housing prices up to levels that are often out of the paying ability of many resident low and middle income families.

Maui County is regarded as having made the most progress in alleviating its low income housing deficit of all of the four Hawaiian Counties. In 1966 a non-profit organization was established on Maui specifically for the purpose of providing housing for elderly and low and moderate income families. By 1973, over 400 such units had been built and 300 more planned. Currently in West Maui, the Napilihau housing development is providing substantial additions to West Maui's stock of lower income housing. However, although housing accomplishments may have "reduced Maui's housing crisis to manageable proportions,"[32] further efforts still need to be made.

One thing which has become evident in reviewing West Maui's housing situation is that whereas many lower income families are being served through publically funded programs and whereas higher income families, investors and seasonal residents are provided an array of housing and vacation units, working, middle-income families are an often neglected sector of the housing market. As these middle income families may not qualify as purchasers or renters of publically funded housing units, they are often forced to choose between housing costing more than their budgets can reasonably afford or substandard living units.

CIRCULATION

Access to the Mahinahina site is currently provided by the Honoapiilani Highway, an old, two-lane local road that meanders along the coastline from Kihei to Kahakuloa. Its road surface has deteriorated over the years, and current plans call for its distributor function to be superceded by a highway realignment *mauka* of the present location. At the time of the completion of the realigned highway, the existing road may be dead-ended at several locations so that it will serve primarily for local access.

HONOAPILANI HIGHWAY REALIGNMENT

Immediately *mauka* of the Mahinahina site lies the right of way for the proposed realignment of the Honoapiilani Highway. The realigned highway is considered an integral part of the Lahaina District Plan and will be funded through the federal aid highway program. Construction is scheduled to begin late 1975 and to be completed in late 1977.

PROPOSED LATERAL CONNECTOR

The proposed lateral connector road is presently projected to follow the alignment of an existing cane haul road which roughly divides the Mahinahina site into two equal sections (Figure 7). This proposed alignment is only tentative at this time. Any change in the proposed alignment should consider a possible relationship with the proposed 10-acre park site adjacent to the Mahinahina site and a recommended maximum length of cul-de-sac roads amounting to roughly 500 feet, as well as impact on potential use of the Mahinahina Mauka site.

UTILITIES AND SERVICES

The following utilities and services would be available to the Mahinahina Mauka site.

WATER: Water would be provided by the County of Maui Department of Water Supply. Recently a 12 inch diameter water main was installed at Mahinahina to supply the area's recent growth and increased demand. According to Kent Simon, a Department of Water Supply engineer, the new 12-inch line is adequate to handle the demand which would be added by the Mahinahina Mauka development.

ELECTRICITY: Electricity would be provided by Maui Electric Company. Service is currently available to the site from power lines along the existing Honoapiilani Highway.

SEWER: At the present time, sewer service is not available in the Mahinahina area. Maui County, however, is in the process of preparing plans for a sewer line which would run from Honokowai to Napili and which would service the Mahinahina Mauka site. According to the County's current timetable, the sewer system would likely not be in service until 1977. The sewer line will be installed along the existing Honoapiilani Highway.

SOLID WASTE DISPOSAL: The County of Maui provides solid waste collection and disposal service. Rates of $1.00 per house per month are charged by the County in return for the service.

POLICE AND FIRE PROTECTION: The Lahaina District police station and fire station provide the necessary protection services for the Mahinahina Mauka site. Both stations are located at the Lahaina Civic Center, approximately three miles from the site.

Section III: Preliminary Site Plan

GENERAL DESCRIPTION

DEVELOPMENT DENSITY

PHASING

CIRCULATION SYSTEM

DESCRIPTIONS OF INDIVIDUAL PHASES

LAND USE & DEVELOPMENT SUMMARY

GENERAL DESCRIPTION

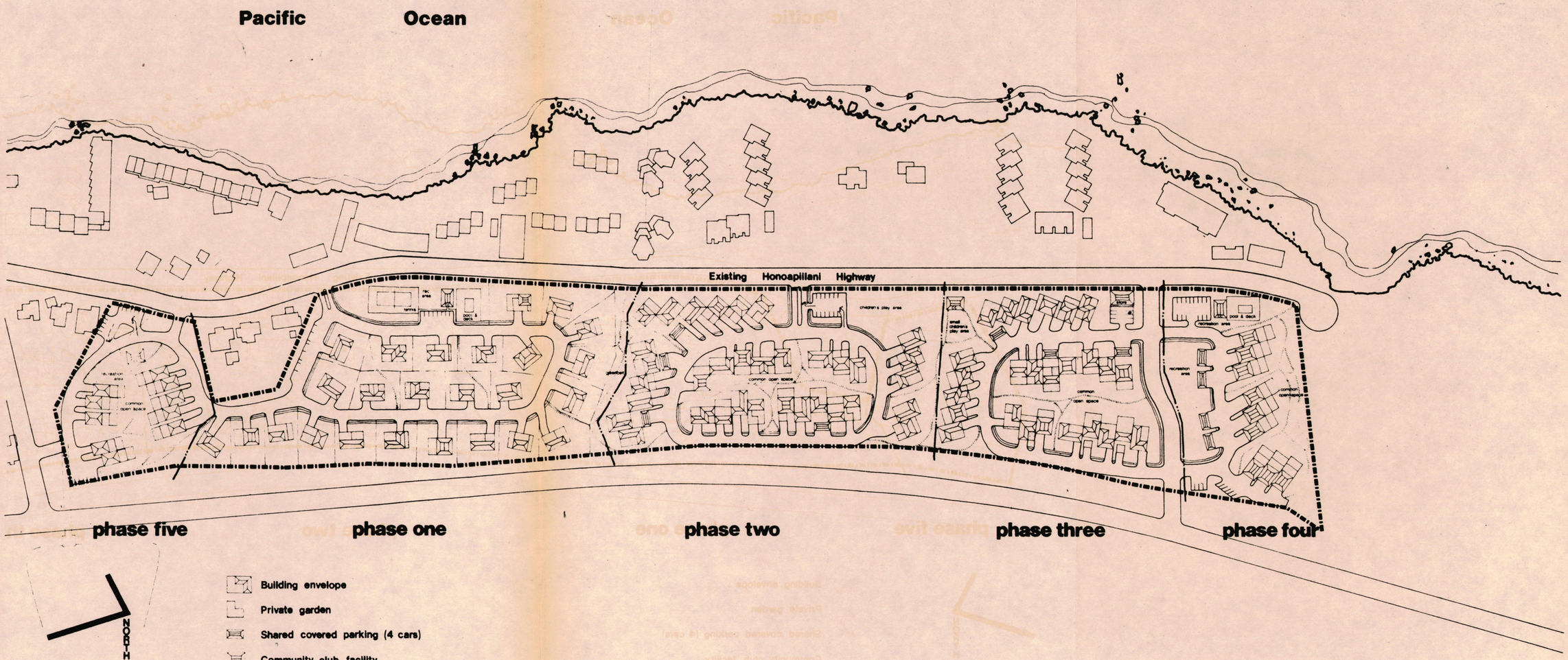
According to the proposed site plan (Figure 17), the site would be developed in five increments to provide four distinct sub-communities, each intended to cater to a particular segment of the housing market in West Maui. The site should be developed as one Planned Unit Development (P.U.D.) with several increments. Development of the site as one P.U.D., rather than two or three, will have several distinct advantages to both the developer and to the West Maui community. First, with one P.U.D., it will be easier to assure coordinated design control over the several increments comprising the entire project. Hence, disharmonious and "hodge-podge" modes of development will be less likely to result on the site, and the visual character of the immediate area may be substantially improved by an integrated design approach to providing a diversity of housing types. Second, the developer will be able to best utilize the site according to the site's environmental capabilities. With one P.U.D., the developer will be eligible for mixing R-3 and A-1 densities and dwelling types, thereby placing more intensive development where it is best suited and best fits the site's capability characteristics. Third, the developer will be eligible for the development bonuses allowed to larger P.U.D.'s. Fourth, only one P.U.D. submission will be required. Fifth, the developer will be able to create more innovative, as well as more environmentally sensitive, housing and design solutions.

The proposed site plan is a direct outgrowth of the natural and social inventories which are summarised in Sections 1 and 2. Site planning decisions have been made on the basis of the compiled data concerning the natural and visual character of the site, legal restrictions and land use policies regarding the site, local development trends, housing market and demand, and the location of public services and utilities which are either planned or extant. Every effort has been made to coordinate site planning requirements derived from the inventories with the requirements of the developer in such a way that the resulting residential development will minimize adverse environmental impacts and maximize beneficial impacts, as well as be feasible to the developer.

In accordance with the Mahinahina Group Partnership agreement, 25 custom house sites adjacent to the Hoyochi Nikko development have been provided on approximately 8 acres, including recreational areas, common open space, swimming pool and tennis club facilities. These 25 custom house sites, if desired, can easily be integrated with the 20 garden apartments proposed for Phase 5 to form a larger sub-community of roughly 10 to 11 acres. The remainder of the site will provide 40 deluxe terraced apartments with ocean views and 60 single family semi-attached housing units and additional recreational and community club facilities.

All house and apartment sites have been carefully located to permit both maximum view potential and maximum privacy for each unit. In general, recreational amenities and extra parking have been placed in areas which either lack view or require buffering. Additionally, house and apartment sites have not been located in direct line with entrance roads. According to the site plan, vitually every house or apartment will have a view.

For both the 25 custom house sites in Phase 1 and the 60 semi-attached house sites in Phases 2 and 3, we propose implementation of a "building envelope" concept (Figure 18). This would mean that the purchaser of a house site would



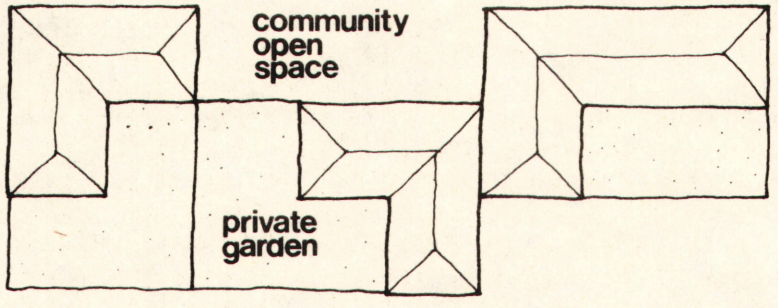
J.two
planning and design consultants

100' 400' 800'

Mahinahina P.U.D.
proposed

Preliminary Site Plan

buy (or lease) a defined portion of land, smaller than an average residential lot, within which, contingent upon compliance with any architectural controls the condominium homeowner's association may pose, he may build his house and have a private garden. In the case of semi-attached or clustered housing, such as in Phases 2 and 3, the building envelope concept allows flexibility in site planning and layout, as well as allows purchasers to have private garden or lawn space adjacent to their homes in addition to shares in the common elements provided in the development. The building envelope concept is also applicable to a subdivided condominium; in this case, the building envelopes restrict building location on subdivided lots more than restrictions posed by zoning requirements regarding front, back and side yard spacing. The building envelope concept has several distinct advantages: (1) It can help insure protection of views and view corridors; (2) It can help assure design control over a project; and (3) It can provide sufficient private lawn and garden space, something frequently neglected in residential condominiums. The building envelopes we propose for Phases 1, 2 and 3 contain 2,400 square feet in area. Considering that in R-3 zones houses can be up to 2 stories or 30 feet in height if desired, the proposed building envelope size is more than adequate to contain a house, lanai and ample private garden.



building envelope concept

figure 18

A variety of recreational and community club facilities will be provided throughout the development. The recreational facilities provided in each phase of the development should meet the specific needs of the prospective purchasers of that phase; hence, as a diversity of housing types as well as the creation of distinct sub-communities are planned for the site, the selection of recreational facilities will vary from phase to phase. Recreational and community club facilities will be described in more detail under the descriptions of the proposed five phases.

Greenbelt buffering needs to be provided in several areas of the site. We have schematically indicated those areas which we felt would require landscaped buffers on the site plan with tree stamps.

DEVELOPMENT DENSITY

The proposed site plan includes:

TABLE 10. UNIT TYPE BREAKDOWN

UNIT TYPE	NUMBER	PERCENT
Single family detached units	25	17.2
Single family semi-attached units	60	41.4
Multi-family units (apartments)	60	41.4
TOTAL	145	100.0%

This development breakdown yields an overall net development density of 5.22 units per acre, which is less than the legal maximum allowable development permitted for the site if redistricted to urban usage with the underlying zoning classifications proposed in the Lahaina District General Plan and if developed as a P.U.D.. According to the Maui County ordinances regarding P.U.D.s, R-3 and A-1 development, the site has an allowable maximum of 109 single family residences, compared with a proposed 85 single family residences. Based upon maximum allowable floor-area ratios and lot coverage calculations, the apartment units proposed are also well within the legal maximums. The multi-family units are located on both the northern and southern ends of the side as permitted by the mixed density/dwelling type option under Maui County P.U.D. regulations. Although it is indeed legally and physically possible for the site to absorb more than the proposed 145 units, we believe that higher development densities would be detrimental to the entire project.

In reviewing the development density proposed for the site not only should the environmental capabilities of the site, legal restrictions, market demands and the elements of the Lahaina District General Plan be considered, but additionally the fact that the development density must justify redistricting of the site from agricultural to urban. If lands which, for well warranted reasons, are redistricted and added to Maui's stock of designated urban lands are underdeveloped, the result will remove more land from non-urban usage than necessary and will encourage sparse and scattered development. Additionally, public investment expended for utilities and services would not be best utilized.

The development density proposed for the Mahinahina Mauka site, in our opinion, represents neither overdevelopment nor underdevelopment of the property. Our research indicates that the density proposed is compatible with the environmental capabilities of the site, and that provisions for a diversity of housing types can optimize residential usage of the site.

PHASING

The phasing shown in the site plan is highly tentative. Phases 2 and 3 could be combined if desired. Phase 5 was designated as the last since development of this area hinges upon whatever becomes of the proposed Mahinahina drainage channel; the developer will likely either have to work directly with the County in the planning of the drainage channel or have to wait until construction of the channel is completed before initiating development of Phase 5. Although we started with the 25 custom sites as Phase 1, it would be equally possible to start development at the extreme northern end of the site (labeled as Phase 4) and continue development successively toward the south.

Final decisions on the phasing of the development should take the following into consideration: (1) Priorities and financing arrangements of the Mahinahina Group Partnership, (2) Market trends and absorption, (3) Phasing of the construction of the realigned highway, (4) Phasing of installation of sewer service, (5) Phasing of construction of the Mahinahina drainage channel, (6) Phasing of construction of the lateral connector road through the site, and (7) Priorities established by Maui County planners and the LUC.

CIRCULATION SYSTEM

Three elements comprise the circulation system of the Mahinahina site: the proposed lateral connector road, a County road which will run through the site; the Mahinahina P.U.D. internal road system; and the Mahinahina P.U.D. internal pedestrian system.

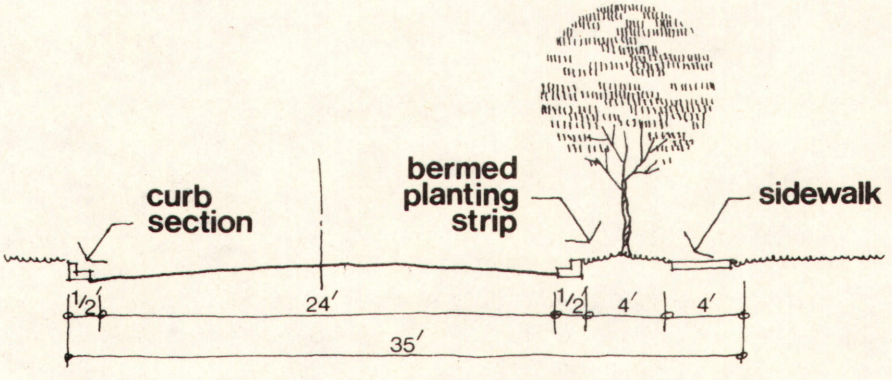
LATERAL CONNECTOR ROAD

The location of the lateral connector road in the site plan is not the same as that tentatively proposed by Maui County (Figure 7). As the County has indicated that it would consider negotiating the location of the lateral connector with the owner and developer of the Mahinahina Mauka site, we have studied possible locations for the road. The location we are proposing in the site plan is superior in several respects to the location suggested by Maui County. First, the location we propose considers a maximum 550 foot cul-de-sac length whereas the County proposal would create an excessively long cul-de-sac length. We are assuming that the County will hold to its plan to minimize through traffic on the existing Honoapiilani Highway by terminating the Mahinahina segment of the road with a cul-de-sac to be located just north of the subject site. Second, the location we propose considers the relationship to the proposed 10 acre County park site. If the park is developed by the County, the lateral connector location we propose would entail a shorter

traffic route for park-oriented traffic than would the location proposed by the county. Hence, the impact of park-oriented traffic on the surrounding area would be less with the location we propose. Third, the location proposed by Maui County bifurcates the Mahinahina site arbitrarily. We propose the location shown in the site plan since, in addition to the above advantages, it occurs at a point where the physiographic character of the site changes and, hence, at a point where development character changes. The road location we propose would act as a logical division between two development types, each of which is in response to a particular set of environmental conditions. It should be noted that the location we propose for the lateral connector would necessitate a road through the site which would be approximately 60 to 70 feet longer than that proposed by Maui County, although grading of the road would not be any more difficult.

INTERIOR ROAD SYSTEM

The internal road system proposed for all phases of the Mahinahina P.U.D. will accommodate two-way traffic and will include a sidewalk on one side of the road in most instances. A schematic road section that would be typical for the project is shown in Figure 19. On-street parking will not be permitted with the proposed road section except where indicated in Phase 1. Adequate off-street unit and guest parking is being proivded to allow the elimination of on-street parking. We feel the result will be far superior visually as well as will be better oriented to the scale of the sub-communities created. Additionally, the visibility of pedestrians will be aided.



typical road section

figure 19

For the Mahinahina site, we feel the loop road concept is the most attractive and the most efficient. Access points have been reduced to eight: 4 on the lateral connector, 3 on the existing Honoapiilani Highway and 1 on the proposed connector road to the south of the site. The latter access would require an easement, but would create a safer and more efficient access to this area.

Porous asphalt should be considered as a surfacing for the internal road system. Use of this permeable form of asphalt is appropriate in an area such as the Mahinahina site where rainfall intensity is high, since this type of road surface minimizes run-off. Additionally, use of porous asphalt can help reduce the need for and cost of supplemental drainage systems.

If desired, the proposed road system can be adapted to a one-way traffic flow system.

PEDESTRIAN SYSTEM

The pedestrian system includes both sidewalks and paths. The sidewalks and paths have been located to provide for anticipated routes of travel (such as from house to recreation areas, house to parking, house to house, etc.) as well as for walking done purely for exercise or recreation. Sidewalks will be buffered from streets by a planting strip. If possible, the path system should coordinate with any plans Maui County may have for bicycle and walking trails along the portion of the realigned highway and the existing highwa- adjacent to the site.

DESCRIPTIONS OF INDIVIDUAL PHASES

PHASE 1

This phase is intended to provide the 25 house sites specified in the Mahinahina Group Partnership agreement. As requested, we have planned staggered lots with approximate 100 foot frontages on the makai side. Each lot has a view and ample side yards. Each unit will have 2.0 covered parking spaces and a double driveway which, in most cases, will have enough back-up space to accommodate 2 guest cars. Additional guest parking will be provided near the recreation area. Recreational facilities for Phase 1 would include, but not necessarily be limited to, a tennis court, a swimming pool with sunning area, a community club building which would include changing and rest rooms for the pool and tennis facilities, lawn sports such as a putting green, and landscaped areas with paths. On the northernmost edge of Phase 1 is a greenbelt ranging from approximately 20 to 70 feet in width. Paths and possibly a bike trail would meander through the landscaped greenbelt.

Phase 1 could be marketed either as a subdivided P.U.D. with 9,900 square foot lots and shares in the common recreational facilities, or as a P.U.D. where purchasers contract for a specific building envelope (instead of an entire lot) and a share in the common open space and recreational facilities. Both lot division lines and building envelopes are shown in the proposed site

plan. Both marketing options are workable and can utilize the site plan shown in Figure 17. If Phase 1 is marketed as a subdivided P.U.D., we suggest that the proposed building envelopes be retained as a design and view control measure.

It should be noted that the roof shapes and building forms shown on the site plan for this phase are schematic only and do not indicate any definite architectural plans. The schematic buildings are drawn in only to (1) eludicate the concept, and (2) demonstrate that it is workable.

PHASES 2 & 3

As these two phases are based upon the same design concepts and parameters, they will be discussed simultaneously. Phases 2 and 3 will provide a total of 60 single family semi-attached houses; 34 units in Phase 2 and 26 units in Phase 3. Each unit will be located in a 2,400 square foot building envelope. In accordance with Maui County ordinances regarding residential P.U.D.s, no more than 5 units may be clustered with common walls, and we have indicated with the schematic housing units. We suggest that common and proximate walls be constructed to appropriate fire wall specifications and be sufficient for acoustical privacy. Currently, we are contemplating unit tile masonry construction for building walls. Each unit would have 2.0 covered parking spaces and a double driveway, which in most cases will have sufficient back-up space to accommodate 2 guest cars. Individual unit parking will be provided either in a private carport attached to the house or in a 4 car covered carport shared with an adjacent unit and located close to each house. Additional guest parking will be provided near the existing highway. Recreational facilities would include, but not necessarily be limited to a community club building, a children's play area, a small children's play area located near the community club building, lawn sports and landscaped areas with trails. In addition to the proposed recreational facilities for these two phases, we suggest a small community "store," if approval for such can be granted. This facility might include a small neighborhood store, similar to the one at Napili Village, which would service the Mahinahina site and might additionally include mail pick up and delivery facilities for the project; a manager's office, if desired; maintenance equipment storage; community recreational equipment storage; and a laundromat. The 'store' could be managed by one of the unit owners and could be an additional focal point of the community.

Phases 2 and 3 are intended to provide housing for working middle-income local residents and could be marketed in several ways. Individual building envelopes along with shares in the site improvements, common areas and recreational facilities could be sold to purchasers who would then arrange individually for the construction of their homes. Completely developed house and lot packages could be sold. Another way of marketing these two phases would involve an agreement between the developer and one or several contractors. A purchaser would contract for a particular building envelope and would have a choice of several architect-designed house plans or of arranging for house plans himself. After all building envelopes, or at least a considerable majority, have been sold in one phase, the contractor would initiate construction of all house units at once, thereby minimizing construction time and possibly helping to reduce house costs through volume material purchases. Of the three, we would suggest the last method.

Again, the building and roof forms indicated on the site plan for this phase are schematic only.

PHASE 4

Phase 4 would provide 40 deluxe apartment units with the following proposed breakdown:

14 2-bedroom units with an area of approximately 930 square feet, excluding covered lanai and open deck

16 1-bedroom units with an area of approximately 460 square feet, excluding covered lanai and open deck

10 Studio apartments with an area of approximately 460 square feet, excluding covered lanai and open deck

The apartments would terrace down the north facing slope as shown in Figure 20. At no point would the units stack more than 2 stories or 30 feet high, as required by the Maui County regulations regarding A-1 development. Upper units will utilize the roof area of lower units as open deck space. These roof decks may be structurally designed to allow planters and potted landscaping. This phase is a prime part of the site, hence, every effort has been made to provide for more intensive, luxury development in this area. At least 1.0 covered parking space is provided per unit. Additionally, guest parking will be provided and, in more cases, driveways will have sufficient

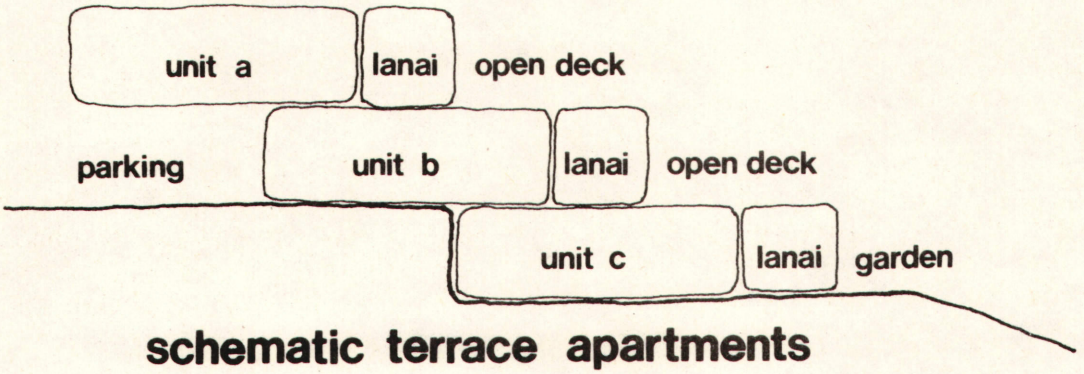


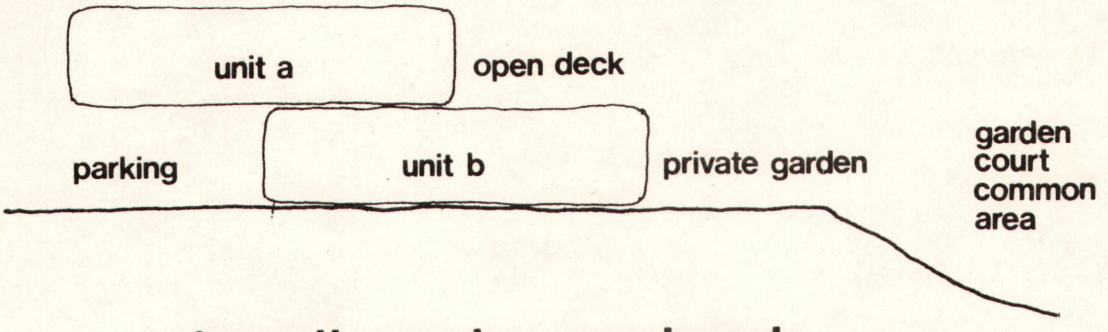
figure 20

back-up space to accommodate some guest parking. Covered parking for individual units will either be included in the building structure (see Figure 20) or located in shared carports for 4 cars. Recreational facilities for this phase will include, but not necessarily be limited to, a swimming pool with sunning area, a community club building, lawn sports and landscaped areas with paths. Phase 4 2ill additionally have easy access to the public sand beach to the north of the site. Buffering will be provided between this phase and the lateral connector road.

PHASE 5

Phase 5 will provide 20 apartment units in terraced units clustered around a landscaped garden court. Units will be approximately 1,200 square feet in area and will have a 600 square foot open deck or private garden adjacent to each unit. Each unit will have 1.0 covered parking space in addition to guest parking and driveway back-up space. Recreational amenities will include, but not necessarily be limited to, a community club building, lawn sports and landscaped areas with paths. The type of units proposed for Phase 5 are schematically illustrated in Figure 21.

Most of the proposed drainage channel will have to be covered if this phase is to be developed as indicated in the site plan. Parts of the interior road system along the southernmost part of Phase 5 may simultaneously serve as the required service road for the channel, thereby providing better usage of the land in this part of the site.



schematic garden apartments

figure 21

A substantial amount of grading will likely be necessary to develop Phase 5. However, it should be noted that substantial earthwork will probably occur in this area as a result of construction of the drainage channel and realigned highway.

The units provided in Phase 5 are intended for year-round living but, if desired, could be adapted to vacation living. This phase would likely be best marketed as a fully developed condominium.

LAND USE AND DEVELOPMENT SUMMARY

The following tables summarize land use and development data for each phase and for the entire project as proposed in the preliminary site plan (Figure 17).

TABLE 11. LAND USE IN ACRES*

PHASE	TOTAL AREA	ROADS, DRIVE-WAYS & PARKING	DESIGNATED RECREATION	ESTIMATED BUILT AREA**
1	8.7	1.6	0.8	1.0
2	6.8	1.5	0.6	1.4
3	5.8	1.0	0.2	1.1
4	3.8	1.0	0.6	0.6
5	2.7	0.9	0.3	0.4
TOTAL	27.8	6.0	2.5	4.5

*computed from site plan

**estimated as 70% of building envelopes in Phases 1, 2 & 3 and as building coverage shown in site plan for Phases 4 & 5.

TABLE 12. COMMON OPEN SPACE ALOTTED IN SITE PLAN IN ACRES*

PHASE	AREA IN COMMON OPEN SPACE**	PERCENT OF PHASE
1	4.9	56.3
2	2.8	41.2
3	2.0	34.5
4	1.6	42.5
5	1.3	45.5
TOTAL	12.6	45.3***

TABLE 13. UNIT DENSITY AND PARKING BY PHASE

PHASE	NUMBER OF UNITS	UNITS PER ACRE	PARKING SPACES PER UNIT+
1	25	2.87	2.56
2	34	4.96	2.41
3	26	4.51	2.31
4	40	10.55	1.70
5	20	7.40	1.90

*computed from site plan

**total phase area minus road, driveway & parking areas; designated recreation areas; building envelopes and apartment building coverage, lateral connector and community "store"

***total area of site divided by sum of common space areas

+designated parking spaces only, excluding driveway back-up space

P - RICHARD STURSBERG

DOCKET NO. A75-399

PARTY P. Richard Stursberg EXH. NO. 1

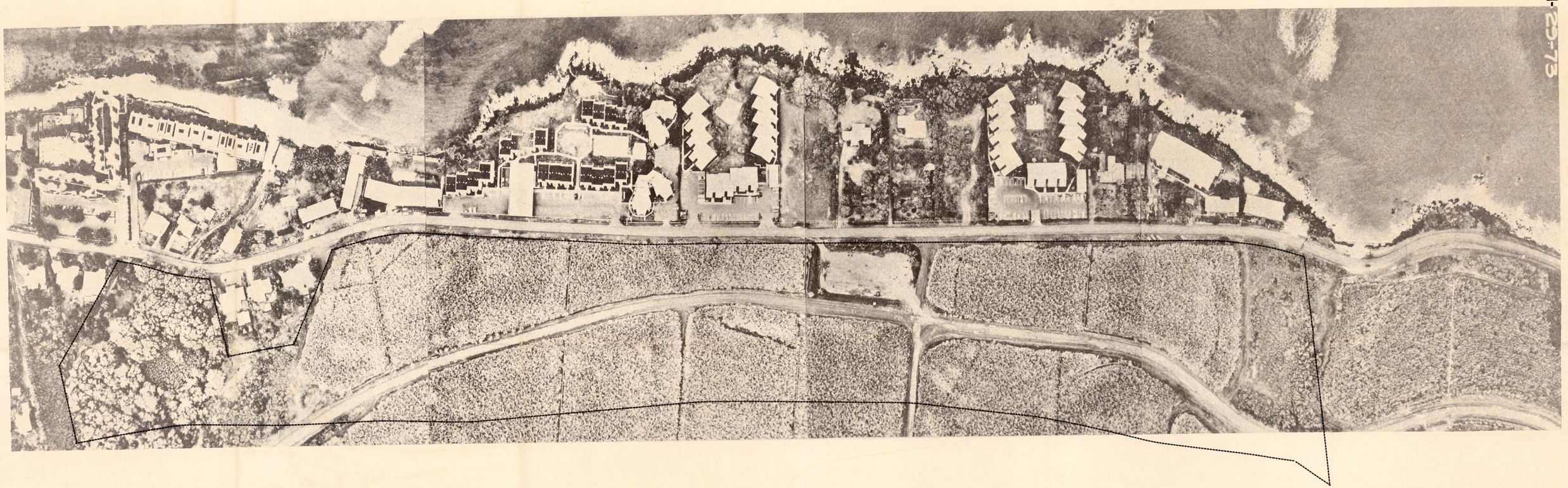
DATE IDENTIFIED 1/15/76 IN EVIDENCE 1/15/76

O. Hawkins

CLERK

J I

11-29-73



NORTH

photo composite

EX J

J.two
planning and design consultants

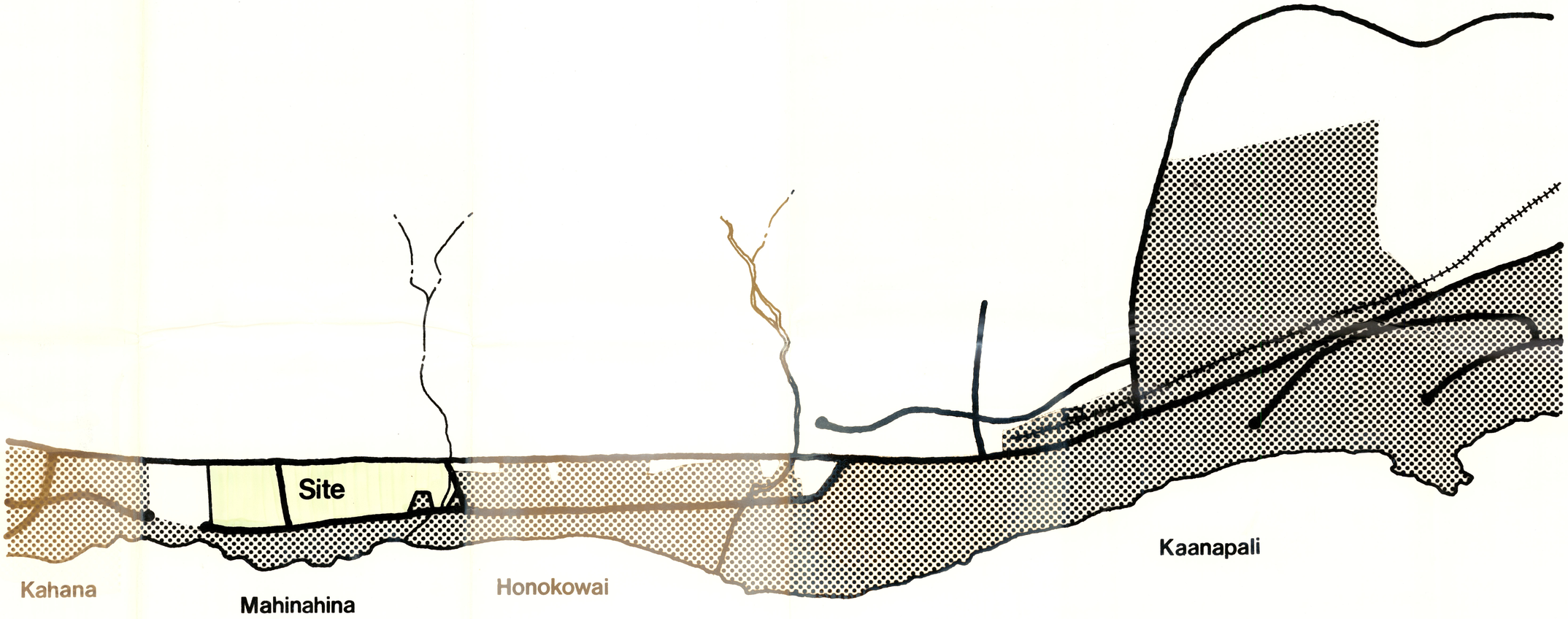
100' 400' 800'

Mahinahina P.U.D.
proposed

7669

State Urban District
State Agricultural District

G



N

0 .25 .5 1.0
scale in miles

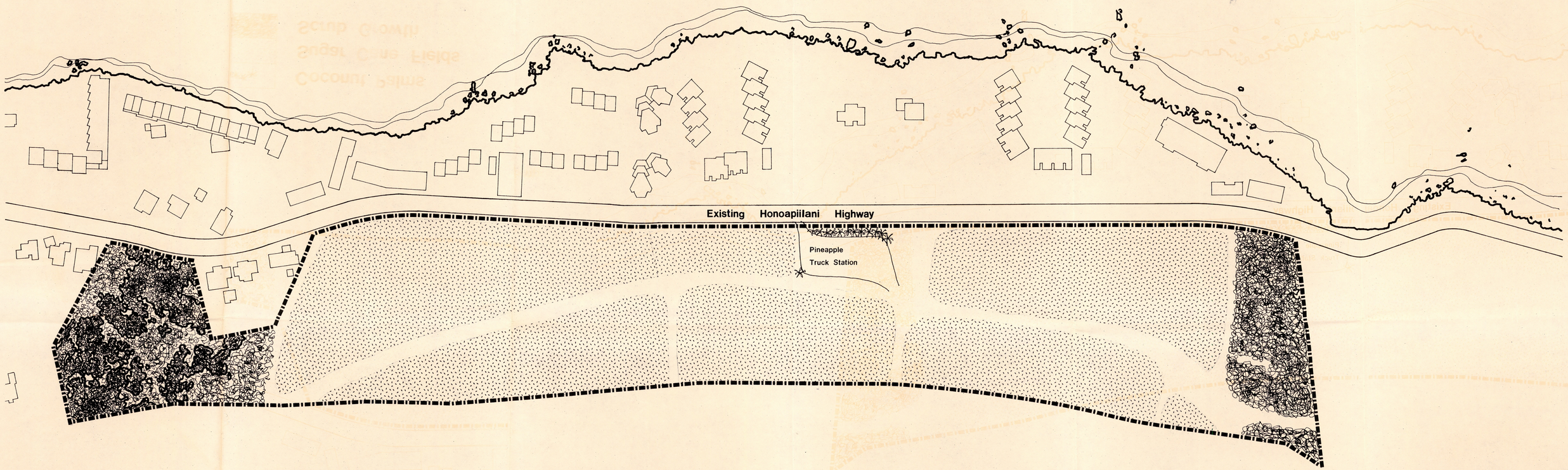
State Land Use Districts

Source: County of Maui Planning Dept.

EX G

7670

F



NORTH

Coconut Palms
Sugar Cane Fields
Scrub Growth

Source: aerial photograph

Vegetation

EX F

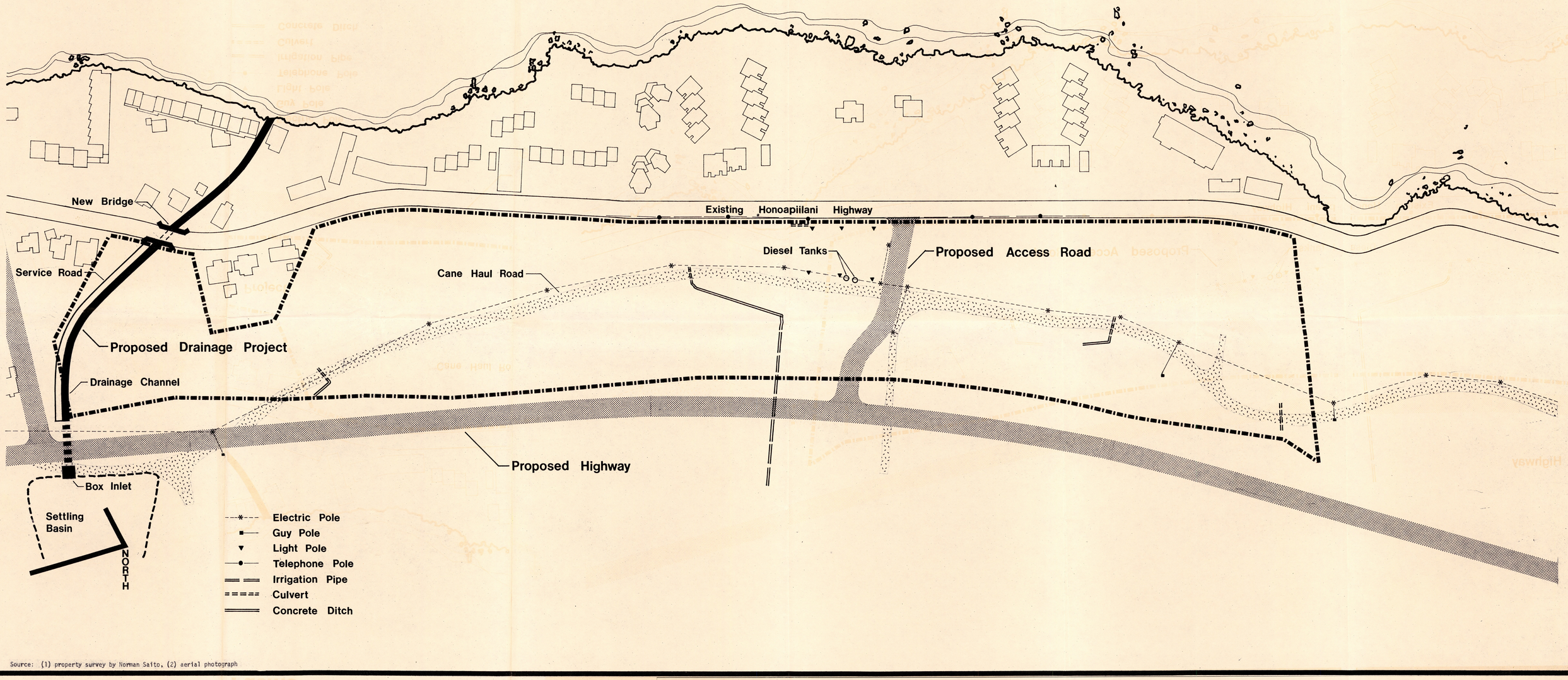
J.two
planning and design consultants

100 400 800

Mahinahina P.U.D.
proposed

7671

E



Source: (1) property survey by Norman Saito, (2) aerial photograph

Man Made Features

EX E

J.two
planning and design consultants

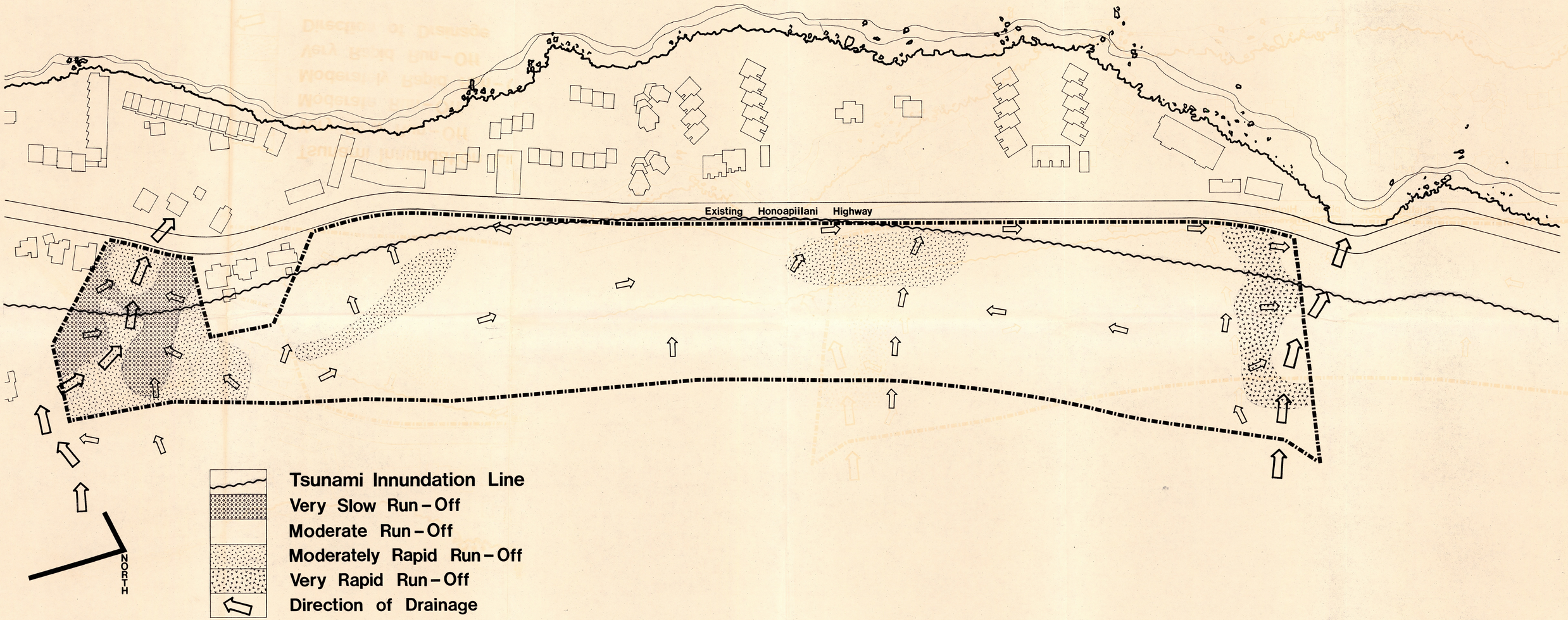
100' 400' 800'

proposed

Mahinahina P.U.D.

7672

D



Hydrology

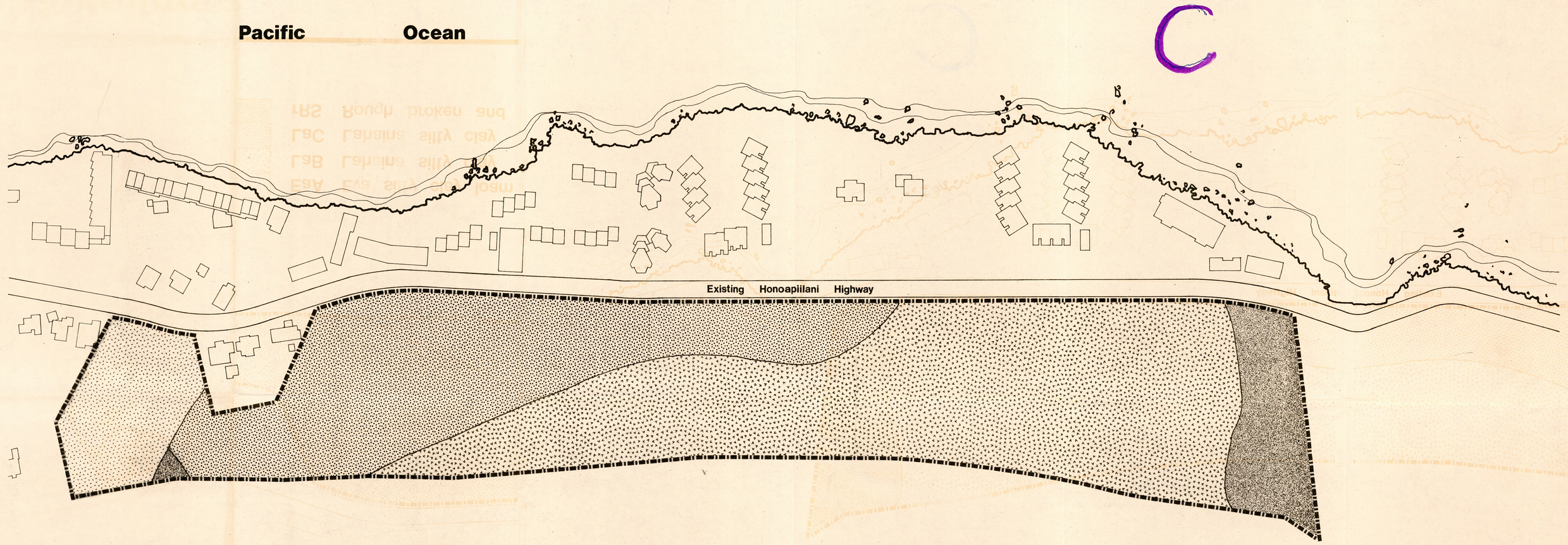
EX D

J.two
planning and design consultants

100 400 800 proposed

Mahinahina P.U.D.

7673



NORTH

EaA Eva silty clay loam
LaB Lahaina silty clay
LaC Lahaina silty clay
rRS Rough broken and stony land

Source: U.S.D.A. Soil Survey

Soils

Ex C

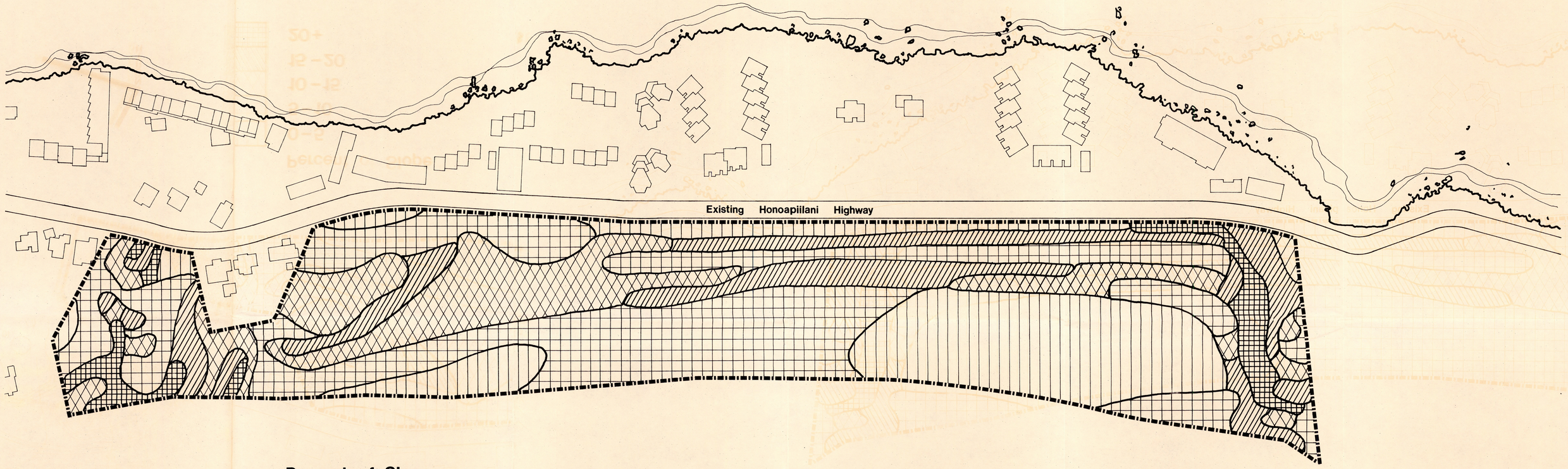
J.two
planning and design consultants

100 400 800
proposed

Mahinahina P.U.D.

7674

B



Percent of Slope

0 – 5

5 – 10

10 – 15

15 – 20

20+

NORTH

Slope Analysis

Ex B

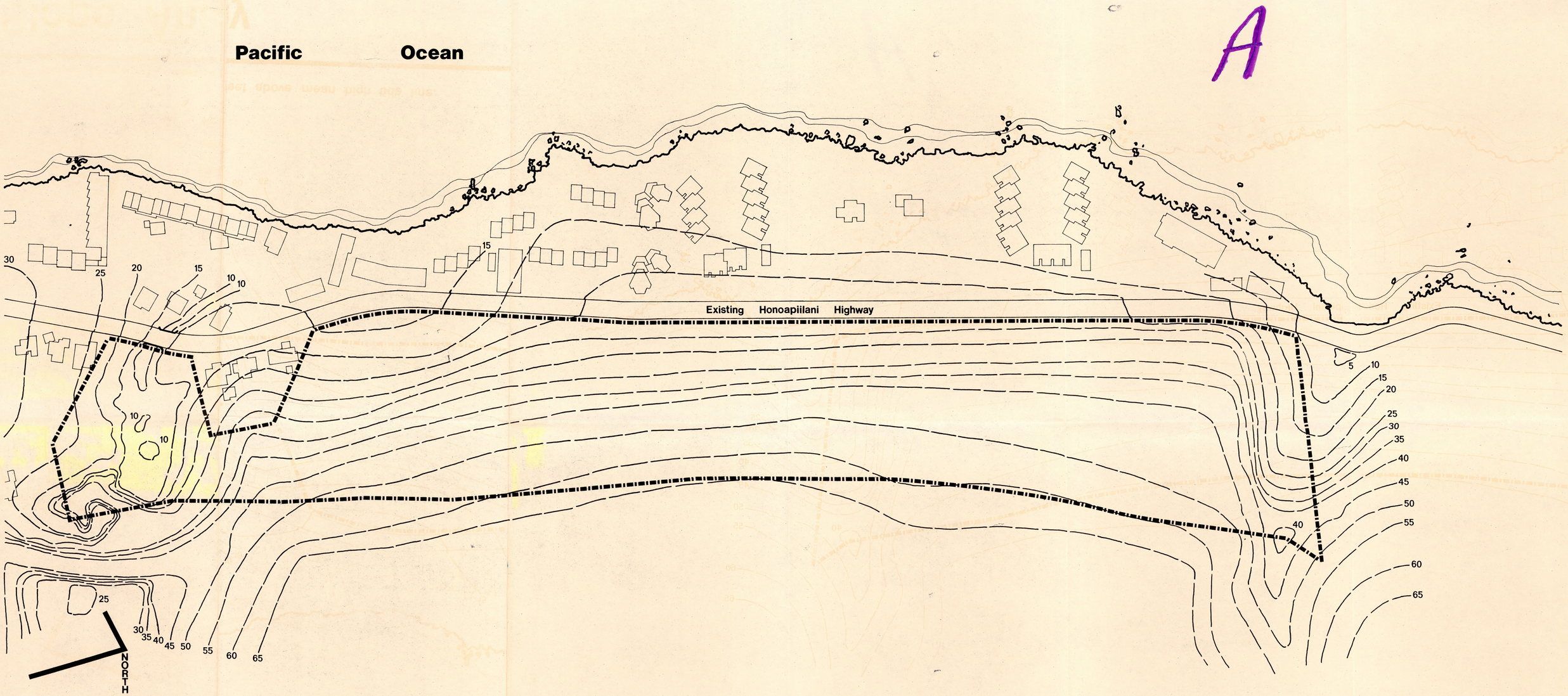
J.two
planning and design consultants

100' 400' 800'

Mahinahina P.U.D.
proposed

7675

A



Elevations of contours given in feet above mean high tide line.

Source: (1) U.S. Soil Conservation Service Survey, (2) centerline profile of realigned Honoapiilani Highway, (3) Pioneer Mill Ltd. field map, (4) on site profiles

Topography

EX-A

J.two
planning and design consultants

100' 400' 800'

Mahinahina P.U.D.
proposed

7676

I



J.two
planning and design consultants

100' 400' 800'

Mahinahina P.U.D.

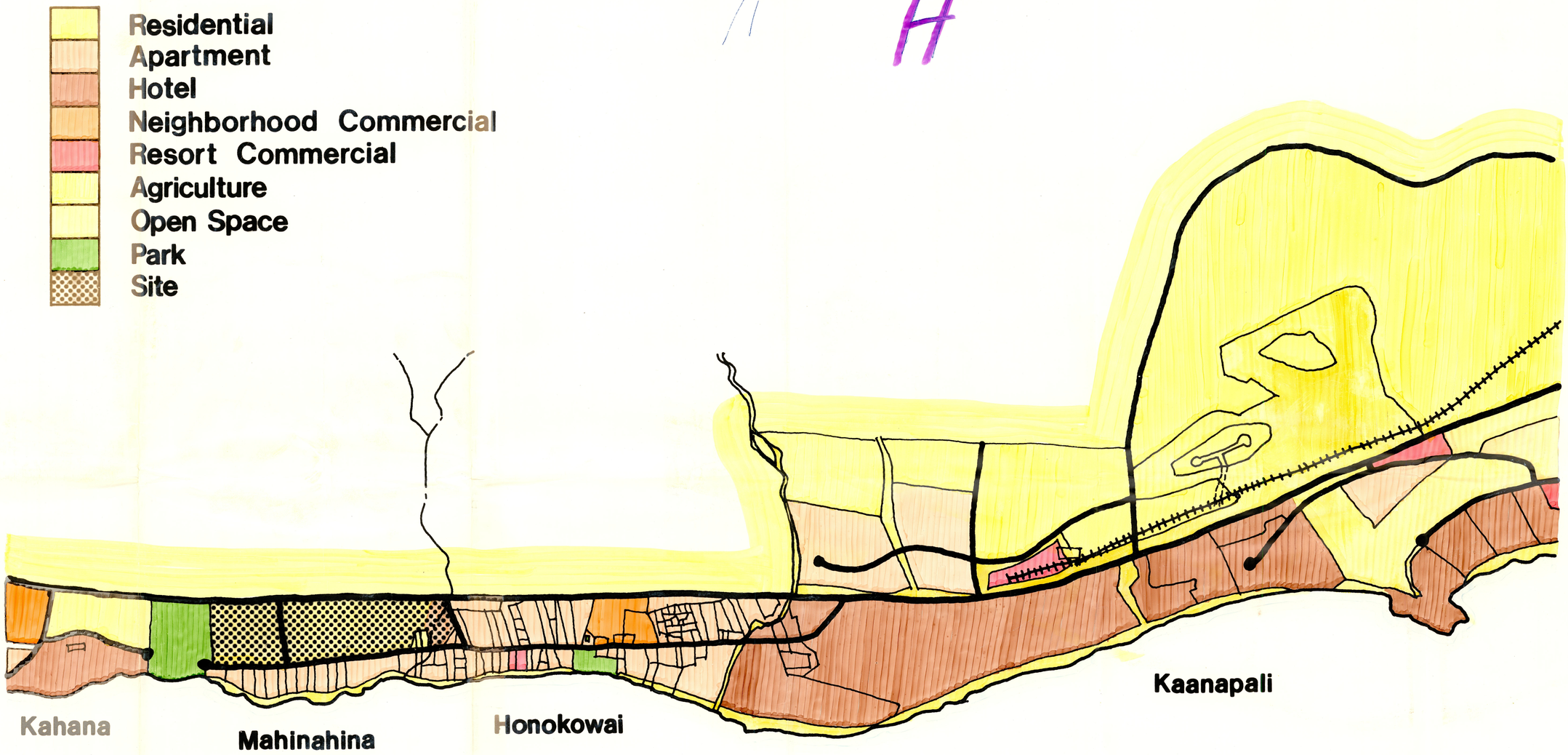
proposed

preliminary site plan

Ex I

7677

H



Proposed Land Use

N

0 .25 .5 1.0
scale in miles

EX H

Source: General Plan for the Lahaina District

7678

BASIC CONSIDERATION FOR STATE LAND USE BOUNDARY AMENDMENTS

To satisfy the purposes and requirements of the Land Use Law and the Land Use Commission's Rules and Regulations concerning boundary amendments, compliance to the following considerations are suggested:

1. A map or set of maps that clearly identifies the area under petition.

2. General information regarding the a) petitioner's interest in the subject property; b) ownership or lessee of the property in question; c) a brief description of the property (i.e. TMK, land court maps); and d) its present land use.

3. If State lands or State funds are utilized in the proposed activity, an Environmental Impact Statement is required.

4. Description of the petitioner's proposed use of the property and/or particular reason for requesting the change, such as available preliminary plans, drawings or visual aids, number of units, type of housing, price of units, etc.

5. A tentative development time schedule for the proposed land use activity.

6. Substantiation of requested amendment:

   a. Provide evidence showing the need for proposed use at this time and at the specific location.

   b. Provide evidence supporting the suitability of the property for the proposed use and for its inclusion within the requested land use classification.

   c. Provide evidence that the surrounding area and its uses will not be adversely affected by the proposed change in land use, or that such use will enhance the surrounding area (i.e. employment opportunities, access to employment centers, impact on agricultural lands, impact on the physical environment).

   d. Provide evidence that public agencies will not be unreasonably burdened by the proposed use (i.e. the availability and adequacy of transportation system, schools, fire and police protection, sewer, water and power).

7. Any additional evidence that the petitioner deems essential to support his petition.

Note: The filing fee is $50.00 and all exhibits must be submitted in duplicate.

G - MAUI PL. DEPT.

PUBLIC TESTIMONY
LUC BOUNDARY AMENDMENT PETITION
DOCKET NO. A75-399

SUBJECT: MR. RICHARD STURSBERG requesting State of Hawaii Land Use Commission approval of a petition for Amendment to the Land Use Commission District Boundary.

We have reviewed the subject petition and offer the following comment:

A. SITE INFORMATION:

1. Location: Mauka side of Honoapiilani Highway, Lahaina District, Mahinahina, Maui (TMK 4-3-01:portion of parcel 31)

2. Land Area: 27.8 acres

3. Zoning: State: Agriculture
Maui County: A small portion is zoned R-3 Residential

4. General Plan:

a) Approximately 25 acres - Residential (R-3, 1 dwelling unit per 10,000 sq. ft. parcel)

b) Approximately 2.8 acres - Apartment (A-1, 2-story at 50% F.A.R. and 25% lot coverage)

5. Interim Coastal Zone Management Rules and Regulations: The parcel is outside of the Special Management Area.

6. Physical Character:

a) Shape - The site is long and rectilinear, parallel with Honoapiilani Highway (i.e. 3,100 ft. in length with an average depth of 400 ft.)

b) Topography & Slope - The site varies from 65 ft. above sea level to approximately 6 ft. above sea level. The majority of the site is composed of slopes between 0 and 15 per cent with a high point of 65 ft. in the center at the mauka boundary functioning as a crown which directs the major storm runoff into natural drainage swales at the north and south ends of the site.

c) Soil - The site is composed of Lahaina series silty clay, categorized by the U. S. Department of Agriculture Soil Conservation Service as La B and La C, identified as Group No. 1 (the highest designation) relative to sugar production with potential yield of 12 to 15 tons per acre per crop.

B. SERVICES:

1. Existing:

a) Roads - The site fronts Honoapiilani Highway and is described in the Final Environmental Impact Statement prepared by the State of Hawaii Department of Transportation Highways Division for the realigned highway as "woefully inadequate and needs to be improved."

- Passing is almost impossible and maximum vehicle speed is limited to 30 MPH (numerous driveways contribute to unsafe conditions).
- Pavement width varies from 16 to 18 feet, and the shoulders vary from 1 to 5 feet.

DOCKET NO. A75-399
PARTY G. Maui Plann. Dept. EXH. NO. 1
DATE IDENTIFIED 1/15/76 IN EVIDENCE 1/15/76
D. Horikawa
CLERK

- Right-of-Way varies from 30 to 40 ft. which accounts for the narrow pavement width.

- Intensity of traffic in the area has changed significantly due to recent residential, apartment, hotel and commercial development.

b) Electric and Telephone - Overhead lines are located along the existing highway right-of-way.

c) Street Lighting - A public system is incorporated on selected utility poles.

d) Water - The County of Maui Department of Water Supply has informed this office that a 16 inch transmission line is existing along the makai side of the highway, and that an 8 inch line is existing along the mauka side. Also, a 1,000,000 gallon water storage tank has been recently constructed which serves the region.

e) Sewer - Existing developments in the area served by self-contained individual sewage treatment facilities; no public system is currently in existence.

f) Storm Drainage - Storm runoff is collected by sheet flow and disposal to the ocean is via natural drainage channels.

2. Proposed Improvements to Existing Services:

a) Roads - The State of Hawaii Department of Transportation, Highways Division, is proposing construction of a realigned Honoapiilani Highway mauka of the subject site. The highway will be limited access and consist of two, 24 ft. wide lanes and a 100 ft. right-of-way. It has been tentatively reported by the State Highways Division that the 1st increment of the 1st phase consisting of approximately 2 miles between Honokowai and Kahana will be advertised for bid in April, 1976, with construction to begin by July 1976. The construction period will probably be limited to 12 months.

b) Sewer - The County of Maui Department of Public Works, Sewer Division, has indicated that plans for the Lahaina Sewer System from Lahaina to Honokowai, including the waste water reclamation plant, will go out to bid during the month of January, 1976; however, the system from Honokowai to Napili, serving the subject site, will require an additional 3 to 4 years for completion.

c) Storm Drainage - The U. S. Department of Agriculture Soil Conservation Service has prepared the Watershed Work Plan (Honolua Watershed) dated January, 1972, which defines measures to be taken at the Lahaina end of the site for the disposal of storm runoff. Said measures are designed to mitigate the adverse environmental impact on the site of flooding from above, and consists of a debris basin mauka of the proposed realignment of Honoapiilani which will discharge through a box inlet spillway into a new conduit under the existing road bed and into a concrete-lined channel to the ocean. The proposed realignment of Honoapiilani Highway will be constructed to accommodate these improvements; even though the Soil Conservation Service is not definite with regard to funding. (The aforementioned Work Plan indicates that Mahinahina improvements will be completed 2.5 fiscal years after initiation of the total project following Napili 2-3 & 4-5.)

C. SURROUNDING ZONING AND EXISTING LAND USES:

1. Napili Boundary

a) State - Agriculture (The urban boundary exists approximately 100 ft. north.)

b) County - G. P. Park

c) Use - Vacant

2. Mauka Boundary

a) State - Agriculture

b) County - None

c) Use - Cane production

3. Lahaina Boundary

a) State - Urban

b) County - ~~Apartment~~ R-3 RESIDENTIAL

c) Use - Single family residential

4. Makai Boundary

a) State - Urban

b) County - A-1 Apartment & A-2 APARTMENT

c) Use - Multi-unit apartment and condominium development

D. PROPOSED USE OF THE SITE:

According to the information available, the site is to be constructed in five increments with a variety of housing price ranges related, to "segments of the housing market in West Maui". The project is proposed to consist of 145 one and two-story units designed in accordance with the County's Planned Development Ordinance as per the following:

1. Single Family Detached - 25 units

2. Single Family Semi-Attached - 60 units

3. Multi-Family - 60 units

In Addition: Provisions will be made for common open space and community recreational facilities.

Timing - It is indicated that the project will be developed over a five-year period commencing in 1977 with completion in 1982; however, completion of the fifth and final phase is dependent upon, according to the petitioner, "whatever becomes of the proposed Mahinahina drainage channel" along the Lahaina boundary of the site.

E. COMMENTS BY GOVERNMENTAL AGENCIES:

1. State Department of Transportation Highways Division - According to the Highway Division Office, the corridor for the proposed realignment of Honoapiilani Highway has been firmly established as it relates to the subject site.

2. U. S. Department of Agriculture Soil Conservation Service - According to the Soil Conservation Service, the Preliminary Site Plan, as submitted by the petitioner, does not recognize the existence of the future Mahinahina flood control facilities defined in the Watershed Work Plan (Honolua Watershed) dated January, 1972. Said Preliminary Site Plan defines Phase 5 of the project as being constructed, partially, over the flood control facilities. Also, it was indicated that an erosion and sedimentation control plan shall be prepared for the project in accordance with existing governmental requirements. (refer to pages 14 and 44 of a summary Report entitled "Mahinahina PUD Site Study")

3. County of Maui Department of Public Works Sewer Division - According to the County Department of Public Works, the Napili-Honokowai section of the Lahaina Sewer System, which would serve the subject site, will be completed within 3 to 4 years from January, 1976.

4. County of Maui Department of Water Supply - Written comments are as follows:

   a) The rezoning from agriculture to urban shall require the petitioner to meet the fire, domestic and irrigation water flows in accordance with the Rules and Regulations of the Board of Water Supply. Offsite waterline improvements may be required in order to meet these flows.

   b) The developer shall provide a water storage facility for the area or pay a storage assessment as calculated by the Modified Method of the Rules and Regulations; such determination to be made by the Department of Water Supply.

F. CONCLUSION:

Based on our evaluation of the subject petition, we respectfully recommend approval for the following reasons:

1. The subject site is in a geographic location characterized by "city-like" concentration of people, structures, and other related land uses.

2. The subject site is located in reasonable proximity to centers of trading and employment and in proximity to basic services such as water, sanitation, schools, parks, and police and fire protection.

3. The subject site has satisfactory topography and drainage, and is reasonably free from the danger of floods, tsunami and unstable soil conditions and other adverse environmental effects.

4. The subject site is essentially contiguous on three sides to existing urban areas.

5. The subject site is projected on the County's General Plan Map for the Lahaina District as an area for urban growth.

In recommending approval, we respectfully request consideration of the following conditions:

1. That full compliance shall be rendered to those requirements defined by the County of Maui Department of Water Supply in its letter dated July 3, 1975, which is attached hereto as an exhibit.

2. That the proposed housing development program shall be revised to reflect local housing needs and that said revised program shall be subject to review and approval by the County of Maui Planning Commission.

3. That the apparent conflict between the Mahinahina flood control measures and the proposed Preliminary Site Plan relative to Phase Five shall be resolved.

4. That full compliance with all Federal, State and County requirements shall be rendered.

We respectfully submit the following exhibits:

1. A General Plan for the Lahaina District, County of Maui

2. Letter from the State of Hawaii Department of Transportation, dated June 27, 1975.

3. Letter from the Department of Water Supply, County of Maui, dated July 3, 1975.

GEORGE R. ARIYOSHI
GOVERNOR

E. ALVEY WRIGHT
DIRECTOR
DEPUTY DIRECTORS
DOUGLAS S. SAKAMOTO
WALLACE AOKI

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813

IN REPLY REFER TO:
HWY-DD
2.23000

June 27, 1975

Mr. Richard K. G. Stursberg
c/o Mrs. van der Linden
P. O. Box 5
Lahaina, Hawaii 96761

Dear Mr. Stursberg:

Subject: Honoapiilani Highway, Honokowai to Alaeloa
FAP Project No. F-030-1(7)

Reference: Your letter dated May 21, 1975

Plans for the subject project are presently being finalized. Provisions for agricultural crossings, both roadway and irrigation, have not been made for the Mahinahina area. In our preliminary discussions, Pioneer Mill Co., Ltd. has verbally indicated that sugar cane cultivation is not planned for this area since the land in question has been sold to you.

Based on the above, the State is proceeding with its design of the highway subject to any adjustments during the negotiations and acquisitions of parcels for the highway. We are providing replacement access presently where Mahinahina Road exists.

If there are any questions or comments, please call or write to Mr. Harris Suyama, our Maui District Engineer.

Very truly yours,

T. HARANO
Chief
Highways Division

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
P. O. BOX 1109
WAILUKU, MAUI, HAWAII 96793

RECEIVED
JUL 7 1975
DEPT. OF PLANNING
COUNTY OF MAUI

July 3, 1975

Mr. Tosh Ishikawa, Director
Dept. of Planning
County of Maui
Wailuku, Hi 96793

Dear Tosh:

Subject: Amendment to State LUC District Boundary - Agricultural to Urban
Mahinahina, Maui, TMK: 4-3-01:31 (Richard K. G. Stursberg)

For the rezoning of the subject parcel of land from agricultural to urban, the developer (applicant) shall be required to meet the fire, domestic and irrigation water flows in accordance with the Rules and Regulations of the Board of Water Supply. Offsite waterline improvements may be required in order to meet these flows.

Further, the developer shall provide a water storage facility for the area or pay a storage assessment as calculated by the Modified Method of the Rules and Regulations; such determination to be made by the Department of Water Supply.

Sincerely,

Shigeto Murayama, Director

CK/KS/ao

cc: Engr.
CO

"By Water All Things Find Life"

G - DPED

DOCKET NO. A75-399

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII G. DPED EXH. NO. 1

DATE IDENTIFIED 1/15/76 IN EVIDENCE 1/15/76

In the Matter of the)
Classification and)
Districting of Certain)
Lands at Lahaina)
Island of Maui)
)
)

DOCKET NO. A75-399
RICHARD K.G. STURSBERG

D. Horikawa
CLERK

TESTIMONY IN SUPPORT OF PETITIONER

The Department of Planning and Economic Development recommends approval of the subject petition based on the following findings:

General Information

The subject property is located in Mahinahina, Lahaina, Maui and is identified by TMK: 4-3-01:31. The total parcel consists of approximately 1,937 acres. The area requested for the boundary change from Agriculture to Urban consists of approximately 25 acres.

The property is owned by the Honolua Plantation Land Company.

The area is designated for residential use under the Lahaina General Plan. The County zoning for the area is R-3 (10,000 sq. ft. residential lots) and agriculture.

Description of Property

The property is located 1 mile north of Kaanapali and lies mauka of and abuts Honoapiilani Highway.

The property is presently predominantly in cane cultivation. The northern and southern ends of the property are characterized by rougher terrain, scrub growth and some very rocky areas. There is a pineapple truck station located along the makai sector of the property. The property is bisected by cane haul roads. Approximately 60% of the property has slopes ranging between 0-10%.

The Land Study Bureau rates the productivity of the area as "A" lands.

The USDA Soil Conservation Service describes soils of the area as predominantly Lahaina series silty clay, 3-7% slope and Lahaina series silty clay, 7-15% slope. At the northern and southern ends of the property, soil types are classified as Ewa series silty clay loam and rough broken and stony land.

Median annual rainfall of the area is 31" per year.

Areas makai of the property below Honoapiilani Highway are zoned urban and in residential and vacation-cabin type uses.

Adjoining mauka areas are predominantly in cane production.

The subject area is also included within the West Maui Flood Program and is part of the Lahaina Watershed. A drainage channel is proposed to be developed at the south end of the property as part of this project. Small makai portions of the parcel are subject to tsunami inundation.

The Department of Transportation is proposing to realign Honoapiilani Highway in this section. The realigned highway will lie mauka of the existing highway.

Description of Proposed Development

The petitioner proposes to develop a residential planned development consisting of 145 units (25 single-family detached units; 60 single-family semi-attached units; 60 multi-family units). A variety of recreational and community club facilities will be provided throughout the development. Estimated sales price ranges from approximately $67,000 to $118,000.

The project will be developed in 5 phases. It is estimated that Phase I will be ready for house construction about June 1977. The petition states that development will depend upon several factors including the construction of the Honokowai Sewer System and assurances that the petitioner can hook into the system; final delineation of the property boundaries; sale of the units; construction of the Mahinahina Gulch Drainage Ditch (Phase V only); and relocation of the cane haul road.

The petition states that water is available from the County's 12" line. Sewage disposal will be by means of connecting with the Honokowai Sewer System Project.

The petition points out that the proposed realignment of Honoapiilani Highway will cut off the subject area from the rest of the cane cultivation land. The resulting area would be a long narrow strip difficult to work and requiring several water sources and provision of new access roads. The petition further points out that they have an agreement with Amfac to the effect that cane cultivation of the area will be terminated with the 1976 crop harvest.

Analysis

The subject property is contiguous to existing urban areas.

The proposed development is in accord with the County General Plan for the area. Should the urban designation be granted, the petitioner will need to obtain appropriate zoning for the property.

Based on the Land Study Bureau ratings, the area is well-suited for agricultural purposes. This is further evidenced by the existing cane production of the property.

The suitability of the area in future agricultural use would be dampened by the proposed realignment of Honoapiilani Highway, which would cut the area off from the mauka cane production areas.

Discussions with the Department of Agriculture indicate they have no objections to the conversion of the area from an Agriculture to Urban District because of the highway realignment and on the basis that the use is in accord with the County General Plan designation for the area, and provided that a determination is made that the area is needed for urban use at this time.

The petition points out that the conversion of these areas to urban uses would not cause economic hardship or loss of employment opportunity at Pioneer Mill Company as long as replacement acreage of comparable productivity can be found elsewhere. The petitioner should verify whether these replacement acreages are in fact available.

The petition points out that the proposed housing units will fill housing needs for the West Maui area. The estimated selling prices for the proposed units are in the $67,000 to the $118,000 price range. The State of Hawaii 1975 Data Book indicates that approximately 78% of the families in Maui County have annual incomes of $14,999 or less.

The petition further points out that the housing demand for secondary homes is 450 units per year as opposed to 135 units per year for resident households. Although the petition states that only one-third of the units will be directed to the retiree and mainland owner market, the above figures indicate that the proposed development would be primarily aimed at the secondary home market. This should be clarified by the petitioner.

With respect to the availability of adequate utilities for the proposed

urban development, the petitioner points out that there is adequate water sources in the area to serve the project. This should be verified by the appropriate County Agency.

The petitioner points out their intention to hook up with the proposed Honokowai sewage facilities. The Department of Health has pointed out that a definite timetable for the construction of these facilities is not known at this time, and will be dependent on the availability of financing for the project. The petitioner has indicated the project will commence by 1977. Clarification is needed as to what interim measures will be taken to resolve this sewage problem.

Discussions with the Department of Transportation indicate that the proposed construction of the realignment of Honoapiilani Highway will commence in the first half of 1976. Design phases of the project are approximately 80% complete. Completion date for the project is undetermined at this time.

Based on the above analysis, the subject area appears to meet the general requirements for an urban designation. The Department of Planning and Economic Development is concerned, however, that the project appears to be directed to the development of housing for the "second residence" market and not the local resident market.

The goal of providing housing for local residents is a primary State and County concern at this time. If the petition is approved, we would urge that the Land Use Commission impose conditions that would insure that the petitioner provides housing to meet the local needs. We concur with the County recommendation that the petitioner be required to provide a housing proposal to the County prior to the development of the project which reflects this marketing direction.

Under the condition that clarification of the various points mentioned previously is provided, the Department of Planning and Economic Development recommends approval of the subject petition.

DEPARTMENT OF PLANNING AND ECONOMIC DEVELOPMENT
STATE OF HAWAII

for Hideto Kono

HIDETO KONO
Director

Gilbert J. Lee

GILBERT J. LEE
Deputy Attorney General

1/14/76